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13. ABSTRACT *(Maximum 200 words)*

This study examined the correlates of mammographic screening in older Mexican-American women, with a focus on the influence of strong family relationships on promoting screening behavior. A random sample of 549 Mexican-American women age 50-74 years in southeast Texas was identified through a one stage cluster sample. Data were collected on 452 subjects through in-home interviews on factors related to ever having a mammogram and having had mammogram in the past two years. Mammography use increases with years of education, household income, having some private insurance, having a usual source of care and perceived susceptibility to breast cancer. Use is not significantly associated with age, marital status and attitudes towards preventive care. Use increases with acculturation, with language use and proficiency having the strongest association. There is a strong potential for family to play an important role in promoting screening behavior, particularly having younger female family members encourage their older relatives to have mammograms. Self reports of mammography for 192 women were validated with medical chart reviews. The positive predictive value was 74% and the overall agreement was 77%.

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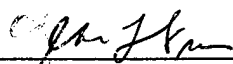
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Table of Contents

I. Introduction

The purpose of this study was to examine the correlates of mammography screening in older Mexican-American women, with a focus on how family relationships are related to screening behavior. A random sample of 549 Mexican-American women age 50-74 years in southeast Texas was identified through a one stage cluster sample. Date were collected on 452 subjects through in-home interviews on factors related to ever having a mammogram and having had a mammogram in the past two years. The survey instrument included questions that measure subjects' health status, level of acculturation, socio-demographic characteristics, knowledge and beliefs about breast cancer and mammographic screening, family networks and relationships, living arrangements, preventive health practices, access to medical care, and insurance coverage. Self reports of mammograms were compared to medical records in a validation sub-study.

II. Research Accomplishments

The statement of work included: 1) surveying a population based sample of older Mexican-American women on their use of mammography services; 2) evaluating the survey in terms of coverage, screening and interview rates; 3) constructing a data base of information from the interviews; 4) testing hypotheses about correlates of mammography use; and 5) validating mammography self-reports through a comparison with medical records. Research with respect to these tasks is described in this section.

II.1   Survey of Mexican-American Women

Study Population

Our study population consisted of Mexican American women age 50-74 years who resided in three southeast Texas counties: Galveston, Brazoria, Matagorda. The three counties stretch for 140 miles along the Gulf of Mexico and up to 100 miles from Houston in Harris county (Figure 1, Appendix 1). All three counties are designated non-metropolitan counties by the U.S. Bureau of the Census and are considered rural for health care delivery issues within the state [1]. Defined by the percent of persons living in rural areas, however, the degree of rurality varies from about 6 percent in Galveston County to 39 percent in Matagorda County. The counties also differ in the percent of their population reporting Mexican American ethnicity in the 1990 Census, from 12 percent for Galveston to 23 percent for Matagorda (Table 1, Appendix 1). The Hispanic population (which is largely Mexican American) in all three counties has roughly half the educational attainment and income of the non-Hispanics. In Galveston, the number of primary care physicians per 10000 population is 6.6, which is close to the ratio for the entire state (6.0) [1]. The ratio is lower for Matagorda (5.3) and Brazoria (3.8) counties.

Sample Design

The goal of the survey was to obtain a representative sample of the Mexican American women 50-74 years of age residing in blocks or block groups of Brazoria, Galveston, and Matagorda counties. Described below are the procedures we used to 1) estimate the required sample size and 2) select the sample with data at the block group level from the Bureau of the Census.

Estimating the Sample Size:

The study required that we estimate the prevalence of mammography among Mexican American women ages 50 and over. Previous studies suggested rates as high as 30 percent and as low as 10 percent. Table 2 (Appendix 1) shows the sample sizes required for 90 and 95 percent confidence intervals of width 10 percent. We wanted to have an 80 percent probability of covering the true prevalence rate, which is analogous to power in hypothesis testing. Calculations were done using the program PC-SIZE [2]. This means that if 30 percent of Mexican American women in the survey area have had a mammogram, then a sample of 349 interviewed women would generate a 95 percent confidence interval of length 10 percent which contains 30 percent 80 percent of the time. Put differently, if we interviewed 248 women we would be 90 percent confident the resulting interval from, for example, .25 to .35 will contain the true underlying mammography rate 80 percent of the time. The second major column of Table 1 reflects an adjustment for an 80 percent response rate and a 25 percent design effect due to cluster sampling. These adjustments inflate the required sample sizes by 56.25 percent. Thus we needed to identify 616 Mexican American women aged 50-74 to obtain the equivalent of a simple random sample of 394.

Given an approximate combined sample of nearly 400 women we then projected the probability of detecting significant predictors of mammography. In Table 3 (Appendix 1) various combinations of predictor distributions are shown for at least 80 percent power, two sided alternative (α=0.05), and a base screening rate of .25. We only considered predictor distributions which sum to 400, e.g. 100 and 300 (or less). Thus a shift from a screening prevalence of .25 to .4 will be detected with 80 percent probability for predictors which split 300 versus 100, such as the poverty variable. A shift of .2 could be detected for variables as small as 100 per level with 85 percent probability. With a sample of 322 with a 40 percent positive rate a shift in screening of 15 percent again has an 80 percent power.

Our intent was to measure the nature and level of family contacts through the survey using social support and familism scales from other investigators, such as the familism scale developed by Sabogal et. al. [3], and the associational, affectual and reliance scales used by Markides [4]. These were all quantitative scales with standard deviations smaller than those of the prevalence rates. Hence, the confidence intervals would be smaller.

6

Selecting the Sample:

The 1990 census indicated that the target population contained about 3760 women (Table 4, Appendix 1). Available block group (BG) data indicated that these women were contained in a population of <5760 Hispanic females ages 50-74. The target counties contained 191,541 housing units of which 82% were occupied. Our budget allowed for listing and enumerating 12,000 housing units to obtain a sample of 600 Mexican American women age 50 to 74. The objective of the sample design was to identify a random sample within the constraint of listing and enumerating 12,000 housing units.

The first step was to determine the density of Hispanic women 50-74. Block group data allowed us to classify block groups according to the ratio of: 1) total of Hispanics, 2) total Mexican-Americans and 3) Hispanic (but not Mexican-American) women 50-74 to the number of housing units. Block data does not provide information on 1) the number of total Mexican-Americans and 2) the number of Hispanics or Mexican-Americans by gender or age. Therefore, we estimated the number of eligible Mexican-American women in our sample based on the proportion of total Hispanic women 50-74 at the block group level and total Hispanics and number of housing units at the block level.

In the second step we eliminated all blocks which have no Hispanics at the block level. This was done manually from a printout of Hispanics and housing units for each block within the three county sampling area. This reduced by about half the number of housing units containing the target population.

In the third step we determined the target segment size. A segment is a contiguous collection of housing units that are listed and enumerated. Our target sample size was 600 of which we expected an 80% response rate or a total of 480 completed interviews. There were a number of options available to determine the proportion of rural and urban sample sizes, such as over sampling rural areas to obtain equal sample sizes of 300 rural and 300 urban, fixed sizes (200 rural + 400 urban, 100 rural +500 urban) or a proportional sample of target subjects to housing units (81 rural + 519 urban). We chose to use a proportional sample with 80% coverage of total households. This resulted in needing 430 rural subjects located in 13,326 units and 2,756 urban subjects in 52,861 units. To locate the proportion of this sample to yield 600 eligible subjects would require about 12,461 housing units, which satisfied our budget requirement.

For segment sizes, these proportions resulted in approximately 31 and 19 units to identify each eligible rural and urban subject, respectively. For practical reasons, we wanted to average 2 eligible women per segment. This suggested an average segment size of about 60 housing units.

Based on available data, an estimated number of Hispanic and Mexican-American females 50-74, the yield or number of housing units required for each eligible subject and the number of Mexican-American females 50-74 expected to be located in each segment was made at the block level.

7

In the final step we identified and selected the segments for enumeration. After eliminating blocks with no Hispanics, blocks were aggregated within counties, tracts and block groups. Beginning with the first eligible block, consecutive blocks were aggregated until approximately 60 housing units was reached. The corresponding number of Hispanics contained in those blocks was recorded. This resulted in the final listing of segments to be randomized for selection. As expected several blocks contained well over 60 units. These larger blocks were grouped into multiple segments that were "chunked" later if randomly chosen. For example, a block containing about 120 units would be considered 2 separately numbered segments. If one of those segment numbers was chosen, the multiple segments would be chunked to determine which housing units need to be enumerated.

All block aggregations were given a pre-specified segment number. From these a random number of segments was selected equal to the proportion of urban and rural housing units. These selected segments represented primary sample units (PSUs) to be used for enumeration and interviewing. There were 41 rural segments yielding 91 eligible subjects in 2637 housing units and 155 urban segments yielding 502 eligible subjects in 10,123 housing units. Note that since each segment and therefore each housing unit has a known probability of selection, this is a random sample of the eligible block group population.

Questionnaire

Overview:

The correlates of mammographic screening were investigated in the framework of the PRECEDE-PROCEED ("predisposing, reinforcing, and enabling causes in educational diagnosis and evaluation") model [5], which incorporates concepts from Anderson and Aday's model of access to care [6] and Rosenstock's Health Belief Model [7]. It has been used in previous studies of health screening behavior [8-11]. The PROCEED framework provides the steps for implementation and evaluation.

In this study, we utilized phase 4 of PRECEDE where we examined factors that have a potential influence on mammographic screening. Numerous factors are seen to influence health behavior and PRECEDE aggregates them into three broad categories according to the strategies that might be employed to bring about change. Predisposing factors are individual attributes that motivate one to act and reflect personal preferences that serve to promote or inhibit health behavior. These include demographic characteristics such as age, and educational attainment as well as personal knowledge, attitudes, values, and perceptions of breast cancer and mammography.

Enabling factors pertain to the availability and accessibility of screening services. They are personal and community resources that enable a woman to obtain a mammogram. Enabling factors include insurance coverage for screening mammograms, income, access to transportation services, and having a usual source of health care.

8

Reinforcing factors are external influences that support or hinder screening behavior. They include factors antecedent to screening that may affect a woman's seeking services. Or, they may influence subsequent (routine) use of screening mammograms through reinforcement or discouragement of the behavior. The attitudes and behavior of family, friends, and health care providers are particularly important sources of reinforcement. Exposure to pamphlets and media messages that encourage breast cancer screening can also affect screening behavior.

Of particular interest in this study were the predisposing and reinforcing factors that are unique to the Mexican American population, such as level of acculturation and strong family support. The major focus of the research was determining whether these factors are associated with ever having had a mammogram and having had a mammogram in the past two years.

A questionnaire was developed that collected information on measures needed to examine the relationships among mammography use and predisposing, enabling and reinforcing factors in the PRECEDE model (see Appendix 2). This section contains a summary of the questions and scales used in the questionnaire.

Predisposing Factors:

Demographic information was collected on age, education, and employment status. Education was measured as highest grade or year of regular school completed. Employment status was assessed in terms of whether the subject was currently employed, a homemaker, on disability or retired.

Acculturation was measured with the Hazuda acculturation scale [12]. Separate subscales measure proficiency in English, language usage, value placed on culture, attitude toward traditional family structure and interaction with mainstream society. A composite score was generated from the items measuring English proficiency, value placed on culture and adult interaction with mainstream society.

We used the SF-36 [13] developed by the Medical Outcomes Trust to measure health status. The SF36 includes scales that measure eight dimensions of health: physical functioning, role limitation, bodily pain, social functioning, mental health, role limitations due to emotional problems, vitality, energy or fatigue and general health perceptions. Changes in self-rated health status compared to the previous year are also assessed.

The subject's attitudes about preventive care were determined from her utilization of breast self exam, breast physical exam, and yearly routine check-ups. Knowledge of screening recommendations for breast cancer and the benefits of early detection were assessed with questions on the age and frequency women should have mammograms and chances of surviving breast cancer if detected early.

Her perceived susceptibility and risk was determined from how much she worries about getting breast cancer, her family/personal history of breast cancer and whether or not friends have had breast cancer. Fatalistic attitudes were measured with Cuellar's fatalism scale [38].

Enabling:

Income and measures of financial strain were measured with questions on income from all sources, reported difficulty meeting monthly bills and ability to make ends meet. Information on health insurance coverage was also collected. The subject's usual source of care was determined with questions on whether or not the subject has a regular doctor, a usual source of care and the type of usual source (if any).

Reinforcing Factors:

Marital status was determined from the questions: Are you married, divorced, widowed or never married ? For those ever married, subjects were asked the length of time they have been married, separated, divorced or married. Marital satisfaction was measured with a scale from Markides three generations study [15]. The influence of husband's health and his involvement with the subject's health was also assessed.

Finally, family networks and social supports were measured in terms of living arrangement, number of children, frequency of contact with children and Sabogal et. al.'s [3] measures of the three factors in his familism scale - familial obligations, support from the family and family as referents.

Of special interest in the study were relationships between the subject and her younger female relatives/friends and whether these relationships were associated with screening behavior. A series of questions were asked in order to identify whether the subject had any female family member, relative or close friend, 18-35 years old, who lived within a 1 hour drive. Then, if she had more than one, she was asked which one of these younger women she relied on the most for advice about health matters.

Scales from Markides' study [4] of three generations of Mexican Americans were employed to measure intergenerational association and reliance of older women on this close younger female family member/relative/close friend. The association scale measures objective interactions with questions on how often the respondent (an older women) engages in activities with the younger woman. Sources of help between the subject and the younger woman is assessed with the reliance scale.

The influence of family members was further measured with questions regarding their involvement in the decision to have or not to have a mammogram, including whether any family members ever encouraged the subject to have a mammogram and whether she is more likely to get a mammogram if her husband or any other family member suggests she get one.

10

Mammography Use:

Mammographic screening use was based on whether the subject ever had a mammogram and if so, whether she had one in the past two years. The questionnaire also collected information on the date of the subject's most recent mammogram, why she had the mammogram (health problem or not) and at what facility she received it.

Spanish Translation of Questionnaire:

The questionnaire was initially translated by a member of the study staff (S. Black). To the extent possible, existing translations of questions that have been used in other surveys were incorporated into the initial version of the Spanish questionnaire.

This translation was reviewed by two persons whose primary language was Spanish. It was also back translated by a member of the community whose primary language was Spanish and who met the eligibility criteria of our study (Mexican-American, age 50-74). Revisions were made based the reviewers' recommendations and the results of the back translation. The revised version was pre-tested with a Spanish speaking woman (in the age range 50 to 74) from the local area. Further revisions were made based on this pre-test. A final version was constructed after the interviewer training session and field testing.

Enumeration and Interviewing Procedures

In the first year of the study (July 1, 1996-June 30, 1997), a contract was developed and signed with Louis Harris and Associates to perform the fieldwork and data processing required for the survey. This included listing and enumerating all housing units in the sample, then interviewing eligible subjects.

Project staff at UTMB provided maps of the designated segments for enumeration. These maps included a 1990 Census map and a Delorme map. The Census maps were purchased from the Bureau of the Census. Delorme maps were created using the Delorme Street Atlas USA software program version 3.0 for Windows. These maps are generally easier to read than the Census maps and may give more detail on street names.

Each segment had an identified starting point from which the interviewer was expected to screen every household for an eligible subject. When there were sizable changes in the segment's housing stock, the map was referred back to Mr. Tony DiNuzzo or Dr. Daniel Freeman for clarification.

A subject was defined as eligible if she was female, self identified as Mexican-American and was between the ages of 50 and 74. Four attempts to screen the household in an occupied unit were made. If no one was at home during any attempt, the composition of the household was

11

obtained from a neighbor or city directory. For women identified as eligible, interviewers attempted an interview immediately. Otherwise, at least five attempts (including screen) were made to contact and interview the woman unless she explicitly refused.

Interviewer Training:

Louis Harris employed six bi-lingual, female interviewers for this study. They have had extensive experience collecting health survey data as part of Dr. Markides study on the health of elderly Mexican-Americans.

The six interviewers were brought to Galveston on June 30, 1997 for a training session that included the following topics:

> background and general overview of the study
> enumeration procedures
> securing the interview (introduction, confidentiality, callbacks,
> > preventing and turning refusals)
> probing guidelines
> question by question instructions
> informed consent

In addition, interviewers were given training in computer assisted personal interviews (CAPI). This was the method used by Louis Harris to administer the questionnaire and collect the data. Materials provided during the session included an interviewer training manual, question by question instructions that could be used as aids during the interview process, and a procedures manual for enumeration.

Following the session, procedures were field tested by two interviewers in five Galveston segments not included in the study sample. Information from the pre-test was reviewed by UTMB staff and several areas identified for further improvement before beginning the survey: correcting errors in the CAPI system, providing additional training to the interviewers in enumeration, and making changes to the questionnaire.

Survey Tracking System:

The status of the interviewing was tracked by UTMB staff with spread sheets that recorded, by segment number, the expected number of households based on census projections, the actual number based on interviewer enumeration, the number of household units "screened out" because there were no eligible subjects (no females, no Mexican-Americans, no females 50-74), the number of units with eligible women who refused to be interviewed, the number of units who refused screening, the number of acessible units with no contact, the number of units with no access, the number of vacant units, the number of call backs and the number of completed

12

interviews.

Problems Encountered With Field Work:

Our plan was to release the segments to Louis Harris in three replicates as defined by Dr. Daniel Freeman, co-investigator and survey statistician. Each replicate was representative of the entire sample. In terms of size, the first replicate represented 50% of the sample and the other two each represented 25% of the sample. With this method, if it looked like there would be more than 600 subjects, the final set of segments could be reduced or eliminated. If it looked like there might be less than 600 eligible subjects, Louis Harris was to discuss the possibility of adding subjects with Dr. Freeman and also the cost implications of adding such segments.

In January 1998, Louis Harris informed us that their initial cost projections for the survey ($143,000) overestimated interviewer productivity. As a result they grossly underestimated the direct costs of data collection (interviewer travel costs and time needed to complete each interview). Their personnel costs for project management and data processing were also much greater than initially projected.

They stopped collecting data before completing the first wave of the sample and gave us three options: 1) stop their survey operations permanently; 2) complete survey operations at an additional cost of $100,000 or 3) complete 67% of the second wave for $57,000.

After subsequent discussions with their survey staff and analyses of the data collected, we determined that they completed 178 of the 493 interviews we expected based on an 80% response rate. Our preliminary analyses also found that reducing the sample size would reduce our power to detect significant results.

The Louis Harris estimate of $100,000 to collect these interviews was not affordable. Moreover, there were significant delays beyond what was initially projected in receiving the collected data. We re-exmined the productivity estimates from the interviewer listing sheets and the costs Louis Harris incurred for project management and data processing. It appeared that productivity varied by interviewer (about 4 of 7 interviewers were completing interviews at our projected rates for each segment) and that project management and data processing costs exceeded what we had experienced in managing a similar size survey in the past.

We therefore decided to complete the survey ourselves. We requested permission to do so from the Department of the Army. The Army granted us permission and also gave us a no-cost one year's extension (until August 31, 1999). Our field work ended in March 1999.

II.2 Survey Evaluation

Table 1 (Appendix 3) presents data for the number of occupied, listed and vacant or demolished housing units, as well as coverage rates for this study, for each replicate and the

combined three replicates. The total number of occupied housing units designated by the 1990 census was 13,032. A total of 12,490 housing units were listed by interviewers including 965 houses listed as either vacant or demolished resulting in a total of 11,525 listed occupied units. Thus, based on the number of listed occupied units and number of census occupied units, we were able to list 11,525/13,032 units for an overall coverage rate of 88.4%.

Table 2 (Appendix 3) presents data for the total number of completed interviews, number of eligible subjects, screening results, number of eligible subjects who refused screening, interview and response rates. A total of 451 units yielded completed interviews out of a possible 549 identified eligible subjects or an interview rate of 82.1%. (Note: One unit yielded 2 interviews for a total of 452 interviews.) The overall screening rate was based on all identified units with individuals who agreed to be screened and were able to be screened for interview eligibility. A total of 11,041 units or 95.8% were screened out of 11,525 listed occupied units. The overall response rate for this study (screening rate x interview rate) was 78.7%.

Table 3 (Appendix 3) presents data on a comparison between the expected yield of completed interviews and the actual yield for each replicate and the overall sample. The expected yield refers to an estimated number of eligible subjects anticipated to be identified based on 1990 census block estimates while the actual yield refers to the sum of the number of completed interviews, number of callbacks that were not interviewed and number of subjects who were eligible but refused to be interviewed. Replicate 1 had the lowest yield comparison (87.2%) whereas more than the expected number of eligible subjects were identified in replicate 3 (102.1%).

In summary, based on the measures of survey performance in Appendix 3, the survey produced a valid representative sample of older Mexican American women (age 50-74) in the three Texas counties. Overall, of the 594 Mexican-American women between 50 and 74 years of age expected to be found in the sample area, 549 (92.4%) eligible subjects were identified. The percent of eligible subjects who were interviewed was 82.1%.

II.3 Survey Data Base

The final survey data base contained data from two separate sources: Louis Harris interviews (n=178) and UTMB interviews (n=274). While the questions were identical for both sources, the survey data were collected and processed differently. The data from Louis Harris was entered directly into a laptop (using CAPI software) and then converted to an SPSS file. UTMB staff reviewed this file and found it did not contain all the variables collected in the questionnaire. An Excel file was later sent with these additional variables. These two files were merged using SAS and stored as a SAS file. The data from UTMB was collected with paper questionnaires and entered into an Access data base, then converted to a SAS data base.

Census information pertaining to the sample design (the subject's census tract, block, urban/rural segment) was compiled in an Excel spreadsheet. This information was converted to a

14

SAS data base and merged separately to the Louis Harris and UTMB data bases.

Prior to concatenation, a series of data manipulations were performed on the Louis Harris and UTMB data sets to make the variables conform to a common coding system (e.g., to make sure a "1" in the Louis Harris data set meant the same as a "1" in the UTMB data set for any given variable). This was a rigorous process done one question at a time over the entire interview. Frequencies were generated for all variables and compared across data bases to identify out of range values and possible inconsistencies in coding of variables. Recodes were made, most often to the Louis Harris data base, to maintain consistency. The final edited data base was stored in SAS format.

This process took 2 and ½ months, from April through mid June 1999. This was longer than expected due to problems in processing the Louis Harris data. These problems were attributed to poor documentation (values in their initial "edit master" for the questionnaire did not correspond to what we found in the data base), data errors and conversion from SPSS to SAS format. The subcontract required that the data be provided in SAS format, which Louis Harris was unable to produce. All of these problems were ultimately resolved but resulted in delays that reduced the time we could spend on data analysis.

II. 4 Survey Findings

Characteristics of Study Sample

Study subjects ranged in age from 50 to 74 years with a mean age of 59.5 years. Older women in the sample (65-74) accounted for 30 percent of the subjects. In terms of education 75% had less than a high school education, 17 % had completed high school and 8% had years of schooling beyond high school. The majority of the sample was married (63.5%) and had some type of insurance coverage (54%) - either Medicare, Medicaid, or private. About 91% of the sample reported having a usual source of care. Most women (69.5%) were born in the United States.

Mammography Use

Mammography use was higher than expected and in were close to (or met) the year 2000 goals. The year 2000 goals include: 1) increasing to 80% the percent of Hispanic women age 40 and older who ever had a clinical breast exam and mammogram and 2) increasing to 60% the percent of Hispanic women age 50 and older who received a clinical breast exam and mammogram in the past two years. In our sample, 80% reported ever having a mammogram and 86% reported ever having a clinical breast exam. Over half the sample (56.5%) had a recent (in the past two years) mammogram and 59.5% had a recent breast physical.

<u>Hypotheses</u>

Statistical tests of the study hypotheses were performed based on responses to relevant questions in the interview. Tables and test statistics are contained in Appendix 4. The results are summarized in this section. The statistical significance of the findings is based on the Mantel Haenszel test for ordinal independent categorical variables and the likelihood ratio chi square test for nominal categorical variables. Associations are considered "significant" if the p-value is less than .05.

Hypothesis 1. Selected predictors of mammographic screening behavior in predominantly non-Hispanic populations will generalize to Mexican Americans. These include education, marital status and barriers to access, in addition to beliefs, knowledge and attitudes about breast cancer.

We hypothesized that mammographic use increases with educational attainment and income and decreases with age. Use would also be higher with being married, having insurance coverage and having a usual source of care.

Based on theoretical models of health behavior we expected that use would also be associated with knowledge of the risks and symptoms of breast cancer; attitudes about preventive care; beliefs about the efficacy of screening; and perceived susceptibility to breast cancer.

For both measures of mammography use, use increases significantly with years of education, household income, having some private insurance coverage and having a usual source of care. There is no significant relationship between marital status and use. While use is lower for women 70-74 than younger women, the difference is not significant.

Among those who have heard of a mammogram, 91% of subjects reported that women of their age should have routine mammograms. About 81% felt that women of their age should have yearly mammograms and 10% felt they should have mammograms every two years. When asked the question: "What is the age doctors recommend a women to start having mammograms?", 44% responded with ages from 40 through 50 years and 53% responded with ages less than 40 or greater than 50 or at an age when a woman starts or stops having periods. There was no significant relationship, however, between either measure of mammography use and how often subjects felt that women of their age should be screened or when women should start having mammograms. Likewise, while 98% of women felt the chances of surviving breast cancer were either good (81%) or fair (17%) if detected early, there was no significant relationship between perceived efficacy of screening and use of mammography.

There is a significant relationship, however, between perceived susceptibility to breast cancer and mammography use. Women with female members of their immediate family that have or had breast cancer are more likely to have had a mammogram and to have had a recent

16

one. In addition, women who worry more about getting breast cancer are more likely to have had a mammogram and to have had one in the past two years. Women who worry about their female relatives getting breast cancer are also significantly more likely to have had a mammogram and to have had a mammogram in the past two years.

Finally, with respect to preventive care, among women who reported having regular check-ups, both measures of mammography use increase significantly with recency of check-ups. Use, however, is not associated with performing breast self exams.

2. Women with low levels of acculturation are less likely to have had a mammogram/had a mammogram in the past two years than women with high levels of acculturation.

We hypothesized that all dimensions of acculturation as well as the overall scale are significant predictors of not having a mammogram/having had a mammogram in the past two years. Language use and proficiency, however, would be the strongest predictors. Women who speak only Spanish have lower exposure to television media messages and written material on breast cancer. They also have greater difficulty in locating screening services and making an appointment.

Based on Hazuda's composite score of acculturation, there is a significant association between level of acculturation and both measures of mammography use, with use higher for women who are more acculturated. As hypothesized, language use and proficiency have the strongest associations with mammography use. Both are significantly related to having a recent mammogram. Adult interaction with main stream society is significantly related to ever having a mammogram and almost significant (p=.063) for having a mammogram in the past two years. The other dimensions of acculturation are not significantly related to mammography use.

3. Strong social support related to the family is associated with an increased likelihood of ever having a mammogram.

We hypothesized that strong family networks, in terms of number and frequency of contacts, are associated with a high likelihood of having a mammogram/having had a mammogram in the past two years. Functional social support, in terms of emotional and material resources from the family that are available to older women, also increases the likelihood of mammogram use.

A particular focus of this study is the relationship between elderly women and their daughters or other younger female family members/relatives/friends. We hypothesized that intergenerational solidarity between mothers and the younger women is a significant predictor of mammographic screening. We also hypothesized that: 1) among women who never had a

mammogram. at least 75 percent would get one on the advice of her daughter or younger female family member/relative/friend and 2) among women who have had a recent mammogram, 25 percent would report that her daughter or younger female family member/relative/friend had ever encouraged her to have one.

Neither measure of mammography use was related to household size, number of sons, number of daughters, number of contacts (seen or talked to) with sons and daughters. There was a trend, however, for mammography use to decrease with increasing household size, number of sons and number of daughters. Among those with children, there was also a trend for women who did not see or talk to their sons or daughters in the past month to have lower mammography use.

While mammography use was not related to marital status, among women who are married there is a general trend toward increased use with higher marital satisfaction. The trend is significant (p=.046) for ever having a mammogram and almost significant (p=.078) for having a recent mammogram.

Husbands can also potentially increase the likelihood that a woman would get a mammogram if he (the husband) suggested she get one. Among married women, 77% report they are very likely or somewhat likely to get a mammogram if their husband suggested they get one. Moreover, the likelihood of getting a mammogram if the husband suggests it is significantly related to self reported mammography use. The likelihood of getting a mammogram if any other relative or family member suggests it is also significantly related to both measures of mammography use.

The younger female family member/relative/friend (on whom the women relies the most for advice on health matters) can also affect the likelihood that a women has a mammogram. About two-thirds of the women (67.3%) reported having a younger (age 18-35) female family member/relative/ friend who lived close by (within 1 hour). When asked how often they had visits just to talk, 80% of the subjects reported at least once a week. When asked how often the younger woman gave advice regarding the subject's health, 80% reported at least once a year and 57% reported at least once a month.

Among women who have a younger female family member/relative/friend who lives close by, 80% report they are very likely or somewhat likely to get a mammogram if she suggest it. The relationship between reported likelihood of getting a mammogram on the advice of the younger woman and both measures of mammography use are significant. Moreover, among those who NEVER had a mammogram 64% would be likely to get one on the advice of the younger female relative. Among those who have not had one in the past two yeas, 75% would be likely to get one on the advice of the younger woman.

What role has the family actually played in encouraging women to get mammograms? Only 29% of the subjects report that a family member has ever encouraged them to get a

mammogram. This family member is most likely to be the woman's daughter, sister or husband. Whether or not a family member has ever encouraged a woman to get a mammogram, however, is not related to either ever having a mammogram or having had a recent mammogram (past 2 years).

II.5 Validation of Self Reports

All 452 subjects were asked when they had their most recent mammogram. This response was used to determine a value for self reported mammography use: yes, if they had a mammogram within the two years prior to their interview data and no if they had a mammogram two or more years (including NEVER) before their interview date.

The subjects were also asked to sign a consent form granting permission to verify their self reports through a medical chart review. Written consent was obtained for 433 women and 19 refused. The 433 consent forms were sorted by the medical record location listed on the form: 37 said they had no records (or no doctor) so no facility was listed on the form and 113 listed a private doctor or clinic that we were not able to contact.

Abstraction forms fort the remaining 283 women were sent to facilities where the women indicated we could review their medical records. Facilities were asked to indicate on the form whether they could find records for these women and, if so, record the dates of the most recent mammograms prior to the date of the interview (maximum of 4 dates). Of these 283 forms, 37 were not returned and 53 forms were returned indicating that no medical records for those respondent were found.

We therefore obtained medical record data on 193 women. For one of these women, the date since last mammogram could not be determined from the interview. The 2 x 2 table below compared the self reports to the medical record review for these 192 women.

		Chart Review	
		< 2 years ago	>= 2 years ago or no mammogram in record
Self Report	< 2 years ago	104	36
	>= 2 years ago or no mammogram in record	8	44

Using the medical chart as the gold standard, the sensitivity was .93 (104/112) and the specificity

was .55 (44/80). The positive predictive value was .74 (104/140). The two sources agreed on whether or not the women had a recent mammogram (within 2 years) for 77% of the 192 subjects who had information on both self reported use and medical chart review.

II.6 Discussion

Although Hispanic women have lower rates of breast cancer, they present at a later stage with a poorer prognosis for survival. Ethnic differences in stage at diagnosis may be explained in part by the lower participation of Hispanic women in breast cancer screening. Programs to encourage screening in this population must therefore be developed and evaluated for their effectiveness in increasing the routine use of mammography. Critical to the design of these programs is information on the screening behavior of elderly Hispanic women and how culturally specific values might be utilized to promote annual mammography.

Two hypotheses have been proposed to explain the under-utilization of preventive services in general among Hispanics. One attributes it to problems with access, such as lack of health insurance or having no usual source of care, which are more prevalent in the Hispanic population. The second attributes it to acculturation or the process of change that individuals undergo (in terms of language, attitudes and personality) as they are exposed to a new culture. This hypothesis argues that the more acculturated one becomes the more likely he(she) is to utilize health services.

A number of previous studies have examined determinants of mammographic screening behavior among Hispanic women [15-27], but few have focused on the older age group [16-19, 23]. Subjects in these studies were predominantly Mexican American residents of urban areas. Mammographic screening was found to increase with age [17,24,27] and educational attainment [17] and breast cancer knowledge [27]. It was greater for measures of access to care - having a regular doctor [16] and transportation services [16] - and engaging in preventive health behaviors [16]. Ethnic differences may disappear when controlling for demographic and other factors [22-24], but may also remain as an independent predictor of screening behavior [25,26]. When acculturation had a significant effect, it was attributed either to language preference [15,19] with Spanish language usage interpreted as a barrier to access [28]. Or, it was also attributed to strong attitudes towards traditional family structure with familism in the less acculturated group providing a positive influence on behavior. [21].

Other research involving Mexican American women in Texas suggested that familism may also be an important factor in reinforcing or hindering screening behavior [21,28,29]. Familism is a central value to the Mexican American culture [3,30-32] and refers to the "strong identification and attachment of individuals to their families" [3]. Members of Hispanic families have strong feelings of loyalty and a commitment to provide emotional and material support to others within the family. They also have a strong commitment to extended family relationships and rely on family members in time of need.

20

While familism is a value shared with other cultures, high familism is a particularly distinct and important characteristic in Hispanic groups. It is generally seen as a positive influence by providing a buffer against physical and emotional stress [33]. Family responsibilities, however, may also produce adverse effects such as depression in the elderly [34]. It may also inhibit the acceptance of medical practices and act as a barrier to health services utilization [35].

The effect of familism on utilization of health services, however, may be a function of the care being sought. Frequency of family contacts was found to be positively related to seeking prenatal care early in pregnancy but negatively related to consulting with a physician when ill [28]. Further evidence of the reinforcing role of familism in preventive care is found in a study of breast cancer screening participation among Texas women [29]. Among Hispanic women who participated in the screening program 27 percent cited "pressure from family" as an important factor in their decision to participate.

These studies and the familistic orientation of the Mexican American culture suggested that breast cancer screening among older Hispanic women might be enhanced through family oriented interventions. In Mexican American families, relationships between mothers and daughters and other female members are particularly close [30] and could be used to promote mammographic screening across generations. Family focused interventions based on female relationships is further supported by Markides' study of three generations of Mexican Americans [4]. The family was found to be the dominant source of information and help in all generations. Moreover, women were the predominant source of advice regarding minor health problems, with the older generation relying mostly on their daughters.

Relationships among female family members, especially between mothers and daughters, could therefore form the basis of a community based family intervention where daughters (or other younger female relatives) are encouraged to promote screening behavior in their mothers. The underlying rationale is that the younger population of Hispanics is probably on average better educated and more knowledgeable about cancer risks and screening techniques. They also have more exposure to health screening information in their child bearing years through frequent doctor/clinic visits for maternal and child health services. We argue that a strong, supportive mother/daughter (or other younger female relative) relationship could promote the exchange of this information and provide encouragement to participate in mammographic screening.

In order to design such an intervention, however, more information was needed on the screening behavior of elderly Hispanic women and how culturally specific values such as familism might be utilized to promote annual mammography [36,37]. Hence, the purpose of this study was to survey Mexican-American women age 50-74 in three southeast Texas counties regarding their use of mammographic screening. Through a population based survey, the study identified the correlates of ever having a mammogram and having had a mammogram in the past two years, with a focus on factors unique to the Mexican American population that might

21

reinforce or discourage screening behavior. Of particular interest was the negative influence of low acculturation found in other studies of health services utilization and the potential supportive role of familism.

Data were collected to help us assess the nature and extent of family networks and support and their influence (actual and potential) on screening behavior. To this end, a series of hypotheses were formulated and tested with responses to questions in the interview. These hypotheses addressed whether: 1) selected predictors of mammographic screening behavior in predominantly non-Hispanic populations would generalize to Mexican-Americans; 2) women with low levels of acculturation would be less likely to have had a mammogram (or a recent mammogram) than women with high levels of acculturation; and 3) strong social support related to the family was associated with an increased likelihood of ever having a mammogram (or a recent mammogram).

In summary, we found that mammography use (ever had a mammogram, had mammogram in past two years) increases significantly with years of education, household income, having some private insurance coverage and having a usual source of care. There is no significant relationship between marital status and use nor between age and use. While women appeared to be knowledgeable about the efficacy of screening and the recommendation for routine screening, this knowledge was not associated with mammography use. Use was also not significantly associated with attitudes towards preventive care - particularly having routine check-ups and breast self exams. There was a significant relationship, however, between perceived susceptibility to breast cancer and mammography use. Women with female members of their immediate family that have or had breast cancer were more likely to have had a mammogram and to have had a recent one. In addition, women who worry more about getting breast cancer or who worry more about their female relatives getting breast cancer are also significantly more likely to have had a mammogram and to have had one in the past two years.

There is a significant association between level of acculturation and both measures of mammography use, with use higher for women who are more acculturated. Language use and proficiency have the strongest associations with mammography use.

Our findings suggest that strong family relationships, measured in terms of family size and number of contacts are not significantly associated with mammography use. There is, however, a significant potential for family to play an important role in promoting screening behavior by having an influential family member suggest that a woman get a mammogram. We have focused on the younger female family member/relative/friend living close by that the woman relies on the most for advice about health matters. Family interventions aimed at encouraging the younger woman to promote screening behavior in her older family member/relative/friend could be an effective intervention by reinforcing routine screening practice. Our study found that among those women who never had a mammogram, 64% indicated they would be likely to get one on the advice of the younger female relative. Among those who have not had one in the past two years, 75% would be likely to get one on the younger

22

woman's advice. Moreover, data from the survey indicate that about two thirds of the women have such a younger woman living close by. The majority of these subjects (80%) report that they frequently see the younger woman and have received advice on their health from her.

III. Key Research Accomplishments

- Conducted population based survey of 452 Mexican-American women age 50-74 in three Texas counties regarding use of mammography (ever had a mammogram, had a mammogram in the past year)

  - population from urban and rural areas in southeast Texas

  - based on our survey evaluation (coverage, screening, interview rates), the survey produced a valid representative sample of older Mexican American women in the three counties

  - face to interviews collected data on subjects' health status, level of acculturation, socio-demographic characteristics, knowledge and beliefs about breast cancer and mammographic screening, family networks and relationships, living arrangements, preventive health practices, access to medical care and insurance coverage

  - completed interviews on 81% of eligible subjects

- Constructed analytical data base from survey data

- Findings indicate that:

  - mammography use increases with years of education, household income, having some private health insurance coverage, having a usual source of care and perceived susceptibility to breast cancer

  - use not significantly associated with age, marital status and attitudes towards preventive care

  - use increases with higher levels of acculturation
    - language use and proficiency have the strongest association with mammography use

  - there is a strong potential for family to play an important role in promoting

screening behavior by having an influential family member suggest that a woman get a mammogram

- Implications of findings:

  - family interventions aimed at encouraging younger women to promote screening behavior in older female family members or relatives could be an effective intervention reinforcing routine screening practice

- Conducted validation study of mammography self-reports

  - compared self reports of mammography use on 192 women to medical charts

  - with medical charts as gold standard: sensitivity=.93, specificity=.55, positive predictive value=.74, overall agreement = 77%

  - findings suggest self reports of Mexican-American women may over-estimate mammography screening

  - implications: less progress may have been made in reaching year 2000 objectives in our population and also in the nation as a whole as reported in periodic reviews of the Health People 2000 goals

IV. Reportable Outcomes

1. Manuscripts in progress:

   Role of the Family in Promoting Mammography Screening Among Older Mexican American Women, J.L. Freeman
   Influence of Acculturation on Screening Mammography in Older Mexican American Women. S. Khan
   Correlates of Screening Mammography in Older Mexican American Women, J. L. Freeman
   Validity of Mammography Self reports By Older Mexican American Women, J. Mahnken, T. DiNuzzo

2. Degrees obtained that are supported by the award:
   John Mahnken, Master's Degree in Biostatistics, expected May 2000
   (Mr. Mahnken was paid part time for data analysis.)

3. Informatics such as data bases and animal models, etc.
   Data base of survey interviews on 452 Mexican American women

V. Conclusion

Based on our analyses of the survey data, we have the following conclusions regarding the correlates of mammography use and their implications for designing interventions in this population of older Mexican American women:

1. Women were knowledgeable about the efficacy of screening and the recommendation that women their age should receive routine screening mammograms.

2. Socio-demographic and economic characteristics that may negatively affect screening practice in non-Hispanic populations also appear to affect older Mexican American women. In particular, mammography use decreases with lower levels of educational attainment, income and not having a usual source of care.

3. The major cultural barrier may be language use and proficiency. Mammography use decreases with less use of English and less proficiency in English.

4. Since women are knowledgeable about the efficacy of screening and the recommendation for routine screening, challenges with language may be a barrier in terms of accessing services such as asking physicians for a mammography referral and knowing where to go to get a mammogram.

5. Most women (67.3%) have a younger female family member/relative/friend that lives close by. The majority of these subjects (80%) report that they frequently see the younger woman and have received advice on their health from her.

6. Among those women who never had a mammogram, 64% indicated they would be likely to get one on the advice of the younger female relative. Among those who have not had one in the past two years, 75% would be likely to get one on the younger woman's advice.

These findings have implications for the design of an intervention that activates older women to seek mammography through younger women. Younger women could be exposed to screening information as they visit maternal and child health clinics for routine obstetrical/gynecological and pediatric services. Often older women accompany younger women to these visits but are not direct recipients of health education or services. The clinic could provide the younger women information on screening risks and benefits as they pertain to older women and also information on where to go to receive mammograms. The younger women would then be encouraged to talk to their older family members/relatives/friends about the importance of getting mammograms and assist them in accessing mammography services. Our data support the potential effectiveness of this intervention: a high proportion of older Mexican American women have younger women living close by whom they see frequently and get advice on health matters. Moreover, the majority of these older women are likely to get mammograms

25

on the advice of the younger women.

VI. List of Personnel Paid From Research Effort

Jean L. Freeman, Ph.D.
Daniel H. Freeman, Jr., Ph.D.
James S. Goodwin, M.D.
Kyriakos Markides, Ph.D.
Sandra Black, Ph.D.
Tony DiNuzzo
Whitney Randolph
John Mahnken

VII. Manuscripts

Role of the Family in Promoting Mammography Screening Among Older Mexican American Women, J.L. Freeman
Influence of Acculturation on Screening Mammography in Older Mexican American Women, S. Khan
Correlates of Screening Mammography in Older Mexican American Women, J. L. Freeman
Validity of Mammography Self reports By Older Mexican American Women, J. Mahnken, T. DiNuzzo

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APPENDIX 1

Tables and Figures Describing Target Population and Sample Design
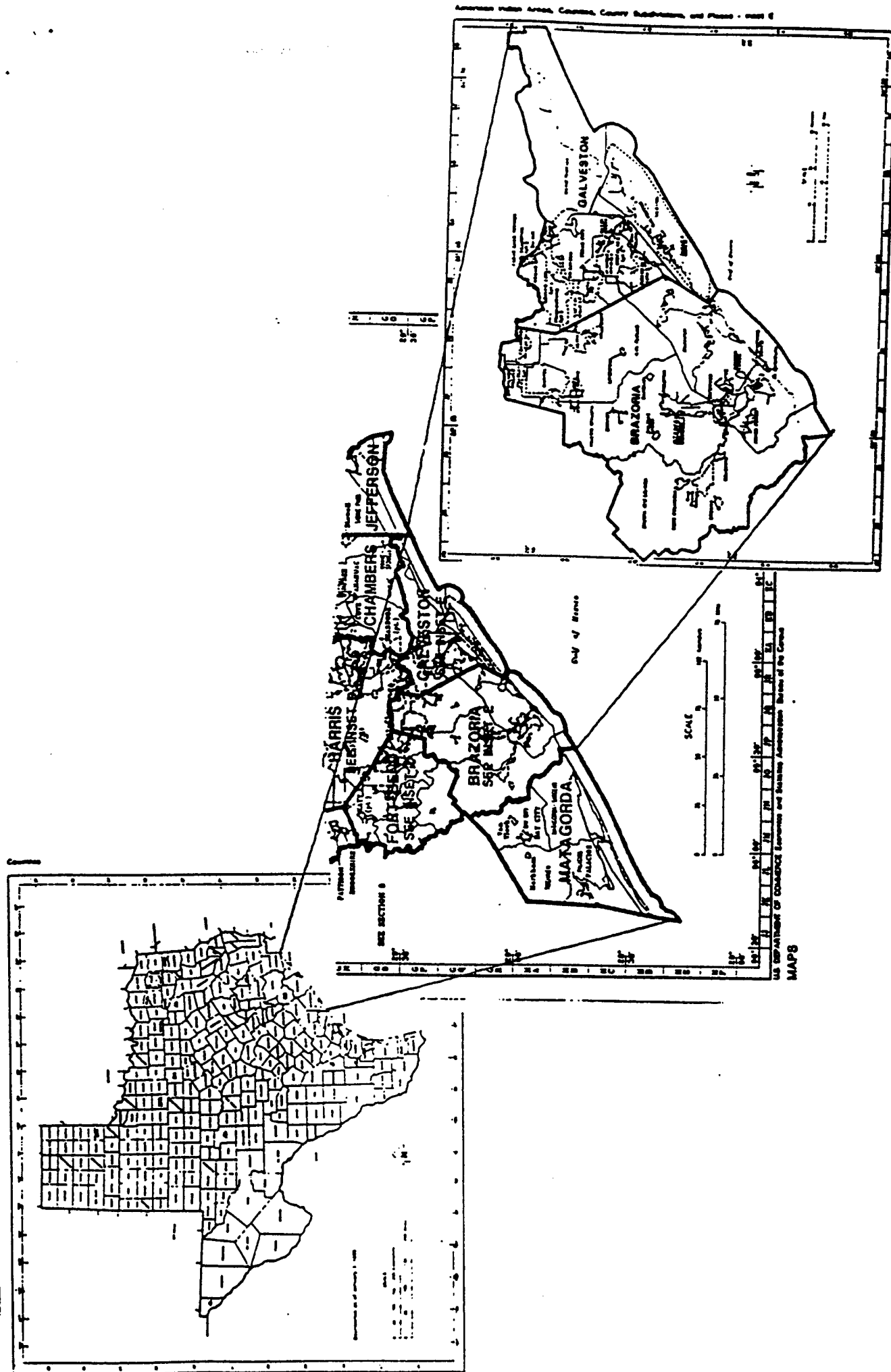
Figure 1. Map of the Three County Study Area

Table 1: Selected Population Characteristics: Galveston, Brazoria and Matagorda Counties

Characteristic	Galveston	Brazoria	Matagorda
Study Population: Mexican American Women 50-74 Years			
50-74 Years	1236	1991	533
50-54 Years	376	478	133
55-59 Years	308	464	139
60-64 Years	231	459	112
65-69 Years	192	367	88
70-74 Years	129	223	61
Total Population	271,399	191,707	36,928
% Hispanic Origin	14	17	25
% Mexican American	12	16	23
% Persons 25 Years+ With No High School Dipoma/GED			
Total	24	25	33
Hispanic Origin	47	48	61
Not Hispanic Origin	21	21	26
Per Capita Income of Persons 15 years+			
Total	$13,993	$13,468	$11,374
Hispanic Origin	8,468	8,123	5,915
Not Hispanic Origin	15,900	14,444	13,986
% Persons Below Poverty Level			
Total	15	10	21
Hispanic Origin	23	18	46
Not Hispanic Origin	14	9	16
Primary Care Physicians Per 10,000 Population			
	6.6	3.8	5.3

Table 2. Sample sizes required for an 80 percent coverage probability by a ±5 percent confidence interval, with 25 percent design effect and 80 percent response rate.

Prevalence	95 percent confidence level		90 percent confidence level	
	Sample Size	Adjusted for Non Response and Design effect	Sample Size	Adjusted for Non Response and Design effect
10 percent	154	241	111	173
20 percent	267	417	190	297
30 percent	349	545	248	387
40 percent	394	616	281	439

Table 3. Power as a function of shift from baseline and predictor distribution

Shift	N1	N2	Power
.15	300	100	.8
.2	101	100	.85
.15	122	200	.8
.2	101	200	.93

Table 4. Population size and characteristics for sampled counties.

Characteristic	Galveston	Brazoria	Matagorda
Population [118]	271,399	191,707	36,928
Mexican American women 50-74 [119]	1,991	1,236	533
Occupied Housing Units [120]	81,451	64,019	13,164
Percent Eligible	2.4	1.9	4.0

APPENDIX 2

Survey Questionnaire

Case #_____

Interview conducted in:

English_____

Spanish_____

WOMEN'S HEALTH SURVEY

**MAMMOGRAPHY USE AMONG OLDER MEXICAN
AMERICAN WOMEN**

**CENTER ON AGING
UNIVERSITY OF TEXAS MEDICAL BRANCH
GALVESTON, TX**

Table of Contents

Interviewer_____
Case No._____

Start Time:_____   Date_____

A. DEMOGRAPHICS

I am going to start by asking about your background.

A1 What is your date of birth?   ____ ____ / ____ ____ / ____ ____
                                   M   M   D   D   Y   Y

                         ____98 DK
                         ____99 RF

A2 How old were you on your last birthday? ___ ___ ___ (years)

                         ____98 DK
                         ____99 RF

A3 In which country were you born?

        ____1 United States ⇨ **GO TO A5**

        ____2 Mexico   ⎫
        ____3 Other, **(SPECIFY)**: _____ ⎬ **ASK A4**
        ____98 DK   ⎭
        ____99 RF

A4   How many years have you lived in the United States? **[IF <1 YEAR ENTER 1;
      ROUND OFF TO NEAREST YEAR, eg. 18 months = 2 years]**

        ____ ____ Years <u>OR</u> since 19 ___ ___ (year)

        ____98 DK
        ____99 RF

A5   What is the highest grade or year of regular school that you have completed?
      **(RECORD HIGHEST GRADE) (DO NOT INCLUDE VOCATIONAL SCHOOL, i.e.
      BEAUTY OR BARBER SCHOOL ETC.)**

        ___ ___ (number of years)   **CODE 12 FOR HIGH SCHOOL OR GED
                                      CODE 16 FOR COLLEGE**

        ____98 DK
        ____99 RF

A5a IF LESS THAN 12 YEARS ASK: Have you obtained a GED, that is, the Graduate Equivalency Examination?

_____1 yes, obtained GED
_____2 no, did not obtain GED
_____98 DK
_____99 RF

A6 Are you currently married, widowed, divorced, separated or have you never been married? **(INCLUDE COMMON LAW MARRIAGES UNDER MARRIED)**

_____1 married
_____2 widowed
_____3 divorced   } **ASK Q.A7**
_____4 separated

_____5 never married
_____98 DK   } **GO TO Q.A8**
_____99 RF

A7 How long have you currently been (married/separated/divorced /widowed) **[Answer from Q.A6]? [IF <1 YEAR ENTER 1; ROUND OFF TO NEAREST YEAR, eg. 18 months = 2 years]**

_____ _____number of years) OR since 19_____ _____year

_____98 DK   **IF LESS THAN ONE YEAR, CODE 01.**
_____99 RF

A8 Are you currently employed, a homemaker, on disability, retired, or have you never worked?

_____1 employed full time
_____2 employed part time
_____3 homemaker
_____4 on disability
_____5 retired
_____6 self-employed - full time
_____7 self-employed - part time
_____8 never worked
_____9 unemployed
_____98 DK
_____99 RF

B. (SF-36) GENERAL HEALTH AND HEALTH CARE

The next set of questions asks for your views about your current health and your daily activities. Try to answer each question with the best possible answer.

B1 In general, would you say your health is:

_____1 excellent
_____2 very good
_____3 good
_____4 fair
_____5 poor
_____98 DK
_____99 RF

B2 *Compared to one year ago*, how would you rate your health in general *now*? Would you say...

_____1 much better now than one year ago
_____2 somewhat better now than one year ago
_____3 about the same now as one year ago
_____4 somewhat worse now than one year ago
_____5 much worse now than one year ago
_____98 DK
_____99 RF

B3 The following questions are about activities you might do during a typical day. After I read each question, please tell me if your health limits you in these activities a lot, a little or not at all. **[SHOW CARD] (IF THE RESPONDENT SAYS SHE DOES NOT DO THIS ACTIVITY, PROBE "IS IT BECAUSE OF YOUR HEALTH?" AND IF "YES", RECORD RESPONSE AS "YES, LIMITED A LOT"; IF "NO", RECORD AS NA)**

Does your health limit you in:	Yes, limited a lot	Yes, limited a little	No, not limited at all	DK	RF	NA
a. *Vigorous activities*, such as running, lifting heavy objects, or participating in strenuous sports.						
b. *Moderate activities*, such as moving a table, pushing avacuum cleaner, bowling, or playing golf.						
c. Lifting or carrying groceries						
d. Climbing *several* flights of stairs						
e. Climbing *one* flight of stairs						
f. Bending, kneeling, or stooping						
g. Walking *more than one mile*						
h. Walking *several* blocks						
I. Walking *one block*						
j. Bathing or dressing yourself						

B4a During the *past 4 weeks*, have you cut down on the *amount of time* you spent on work or other regular daily activities as a result of your physical health?

_____1 yes
_____2 no
_____98 DK
_____99 RF

B4b   During the past 4 weeks, have you *accomplished* less than you would like as a result of your physical health?

     _____1 yes
     _____2 no
     _____98 DK
     _____99 RF

B4c   During the past 4 weeks, were you limited in the *kind* of work or other regular daily activities as a result of your physical health?

     _____1 yes
     _____2 no
     _____98 DK
     _____99 RF

B4d   During the past 4 weeks, have you had *difficulty* performing your work or other regular daily activities as a result of your physical health (for example, it took extra effort)?

     _____1 yes
     _____2 no
     _____98 DK
     _____99 RF

B5a   During the past *4 weeks*, have you cut down on the *amount of time* you spent on work or other regular activities as *a result of any emotional problems* (such as feeling depressed or anxious)?

     _____1 yes
     _____2 no
     _____98 DK
     _____99 RF

B5b   During the past *4 weeks, have you accomplished less* than you would like as *a result of any emotional problems* (such as feeling depressed or anxious)?

     _____1 yes
     _____2 no
     _____98 DK
     _____99 RF

B5c   During the past *4 weeks*, did you not do work or other regular activities as *carefully* as usual as *a result of any emotional problems* (such as feeling depressed or anxious)?

_____1 yes
_____2 no
_____98 DK
_____99 RF

B6   During the *past 4 weeks*, to what extent has your physical health or emotional problems interfered with your normal social activities with family, friends, neighbors, or groups? Have they interfered...

_____1 not at all
_____2 slightly
_____3 moderately
_____4 quite a bit
_____5 extremely
_____98 DK
_____99 RF

B7   How much *bodily* pain have you had during the *past 4 weeks*? Have you had. . .

_____1 no pain
_____2 very mild pain
_____3 mild pain
_____4 moderate pain
_____5 severe pain
_____6 very severe pain
_____98 DK
_____99 RF

B8   During the past 4 weeks, how much did pain interfere with your normal work (including work both outside the home and housework)? Has it interfered...

_____1 not at all
_____2 a little bit
_____3 moderately
_____4 quite a bit
_____5 extremely
_____98 DK
_____99 RF

B9 These questions are about how you feel and how things have been with you *during the past 4 weeks*. After I read each question, please tell me the one answer that comes closest to the way you have felt. **[SHOW CARD]**

How much of the time during the *past 4 weeks*:

	All of the time	Most of the time	A good bit of the time	Some of the time	A little of the time	None of the time	DK	F
a. Did you feel full of pep?								
b. Have you been a very nervous person?								
c. Have you felt so down in the dumps that nothing could cheer you up?								
d. Have you felt calm and peaceful?								
e. Did you have a lot of energy?								
f. Have you felt downhearted and blue?								
g. Did you feel worn out?								
h. Have you been a happy person?								
I. Did you feel tired?								

B10 During the *past 4 weeks*, how much of the time has *your physical health or emotional problems* interfered with your social activities (like visiting with friends, relatives, etc.)? Would you say...

_____1 all of the time
_____2 most of the time
_____3 some of the time
_____4 a little of the time
_____5 none of the time
_____98 DK
_____99 RF

B11 Now I am going to read you a list of statements. After each one, please tell me if it is definitely true for you, mostly true, mostly false or definitely false. If you do not know, tell me. **[SHOW CARD]**

	Definitely true	Mostly true	DK	Mostly false	Definitely false	RF
a. I seem to get sick a little easier than other people						
b. I am as healthy as anybody I know						
c. I expect my health to get worse						
d. My health is excellent						

C. HEALTH SERVICE USE

C1   Is there one particular clinic, health center, doctor's office, or other place that you usually go if you are sick or need advice about your health? **[INTERVIEWER: RECORD YES IF MORE THAN ONE PARTICULAR PLACE]**

_____1 yes ⇨ **ASK Q.C2**

_____2 no
_____98 DK   } **GO TO Q.C10**
_____99 RF

C2   Where do you usually go when you need help with a physical health problem?

_____1 doctor's office
_____2 hospital emergency room
_____3 hospital outpatient clinic
_____4 public health clinic
_____5 HMO/prepaid group practice
_____6 clinic at any workplace
_____7 other **(Specify)**_____
_____98 DK
_____99 RF

C3   What is the name of this **[insert response from Q. C2]**? **[INTERVIEWER: PROBE FOR FULL NAME. DO NOT ABBREVIATE]**

_____

_____98 DK
_____99 RF

C4   Do you usually see the same physician or health professional when you go there?

_____1 yes
_____2 no
_____98 DK
_____99 RF

C5   What mode of transportation do you usually use to get there?

_____1 drive yourself
_____2 driven by someone else   **SPECIFY RELATIONSHIP**_____
_____3 city/regional bus
_____4 taxi
_____5 other **(Specify)**_____
_____98 DK
_____99 RF

C6   How long does it take you to get there?

_____1 < 15 minutes
_____2 15 - 29 minutes
_____3 30 - 59 minutes
_____4 1 hour
_____5 more than 1 hour, less than 2 hours
_____6 2 hours or more
_____98 DK
_____99 RF

C7 How often do you find it difficult to arrange transportation to see a doctor?

_____1 never
_____2 sometimes
_____3 often
_____4 always
_____98 DK
_____99 RF

C8   Some people visit a doctor for a routine check-up, even though they are feeling well and have not been sick. When was the last time you visited a doctor for a routine check-up? **[If "Never" record "0" for time since]**

_____SPECIFIED DATE: ___ ___ 19___ ___
                          MONTH   YEAR

_____Time since _____days   weeks   months   years   **AGO**   } **Go to C9**
                        (Circle correct time since)

_____98 DK ⇨   **ASK Q.C8a**
_____99 RF

C8a **If DK then probe:** Was it less than 1 year ago, at least 1 year but less than 2 years ago, or 2 or more years ago?

_____1 less than 1 year ago
_____2 at least 1 year but less than 2 years ago
_____3 2 or more years ago
_____98 DK
_____99 RF   **[INTERVIEWER: PROBE EXTENSIVELY IF DK FOR C8a]**

C9 When was the last time you went to a doctor for care or advice, other than a routine check-up? **[If "Never" record "0" for time since]**

_____SPECIFIED DATE: ___ ___ 19___ ___
                          MONTH   YEAR   ⎫
                                                             ⎬ **Go to C9b**
_____Time since _____days   weeks   months   years **AGO** ⎭
                          (Circle correct time since)
_____98 DK ⎫
_____99 RF ⎭ **ASK Q.C9a**

C9a **If DK then probe:** Was it less than 1 year ago, at least 1 year but less than 2 years ago, or 2 or more years ago?

_____1 less than 1 year ago
_____2 at least 1 year but less than 2 years ago
_____3 2 or more years ago
_____98 DK
_____99 RF   **[INTERVIEWER: PROBE EXTENSIVELY IF DK FOR C9a]**

C9b In the past 12 months, have you ever put off or postponed seeking medical care you felt you needed?

_____1 Yes, put off or postponed
_____2 No, did not put off or postponed
_____98 DK
_____99 RF

C10 IF NO USUAL SOURCE OF CARE, What is the main reason that you do not have a regular place where you go for health care? **[DO NOT READ OPTIONS]**

_____1 have not needed a doctor/ don't get sick
_____2 have several doctors depending on what is wrong
_____3 previous doctor is not available any more
_____4 haven't been able to find an appropriate doctor/don't know where to go
_____5 recently moved here
_____6 not enough money/cost
_____7 no physicians in the area
_____8 don't like doctors
_____9 don't think doctors can help
_____10 other **(Specify)**_____
_____98 DK
_____99 RF

C11 Where do you usually get your female health care? **probe: IF HOSPITAL:**"Do you usually go to an outpatient clinic or an emergency room?" **IF CLINIC:** "Is this a public health clinic or some other kind of clinic?"

_____1 doctor's office
_____2 hospital emergency room
_____3 hospital outpatient clinic
_____4 public health clinic
_____5 HMO/prepaid group practice
_____6 clinic at any workplace
_____7 no particular place
_____8 do not get female care   ⇨ **GO TO Q.C13**

_____9 other **(Specify)**_____
_____98 DK
_____99 RF

C12 Do you usually get your female health care at the same place you usually get your other medical care?

_____1 yes
_____2 no
_____98 DK
_____99 RF

C13 When you go for medical or female health care, do you usually go by yourself or does someone usually go with you?

_____1 by yourself ⇨ **GO TO Q.D1**
_____2 with someone else ⇨ **ASK Q.C14**

. **If "With someone else" specify relationship**_____

_____98 DK ⎫
_____99 RF ⎰ **Go to Q.D1**

C14 Why does **[insert who is specified in C13]** usually go with you?

_____1 companionship/support
_____2 need for translator
_____3 transportation
_____4 other **(Specify)**_____
_____98 DK
_____99 RF

D. PERSONAL HISTORY OF BREAST CANCER

D1 Has a medical doctor ever told you that you had cancer of any kind?

    ____1 yes   ⇨ **Ask Q.D2**

    ____2 no

    ____98 DK } **GO TO Q.D4**

    ____99 RF

D2 What kind of cancer was it? [Multiple record if necessary]

    ____1 breast

    ____2 lung

    ____3 colon/rectum

    ____4 cervical

    ____5 other (Specify)_____

    ____98 DK

    ____99 RF

IF BREAST CANCER NOT MENTIONED IN Q.D2 THEN ASK D3; IF BREAST CANCER MENTIONED IN Q.D2 GO TO D4;

D3 Has a doctor ever told you that you had breast cancer?

    ____1 yes

    ____2 no

    ____98 DK

    ____99 RF

D4 Are there any female members of your immediate family who have or have had breast cancer? By immediate family, I mean your mother, sister, aunt, daughter or grandmother? [INCLUDE THESE FAMILY MEMBERS WHETHER IN-LAWS OR NOT]

    ____1 yes ⇨ **ASK Q.D5**

    ____2 no

    ____98 DK } **GO TO Q.D6**

    ____99 RF

D5 Who was that?   [Multiple record if necessary]

_____1 mother   Number of family members mentioned_____
_____2 sister
_____3 aunt
_____4 daughter
_____5 grandmother
_____6 Other (Specify)_____
_____98 DK
_____99 RF

D6 Other than female members of your immediate family, are there any other relatives or close friends who have or have had breast cancer?

_____1 yes
_____2 no
_____98 DK
_____99 RF

E. MAMMOGRAMS AND BREAST PHYSICAL EXAMS

Now I am going to ask you some questions about different kinds of breast examinations.

E1   A mammogram is an x-ray taken only of the breasts by a machine that presses the breast between two plates. Have you ever heard of a mammogram?

    ____1 yes, heard of mammogram ⇨ **Ask Q.E2**

    ____2 no, never heard of mammogram ⎫
    ____98 DK   ⎬ **Go to instructions above Q.E20**
    ____99 RF   ⎭

E2   Have you ever had a mammogram?

    ____1 yes ⇨ **ASK Q.E3**

    ____2 no   ⎫
    ____98 DK ⎬ **GO TO Q.E11**
    ____99 RF ⎭

E3 When did you have your (most recent) mammogram?

    ____SPECIFIED DATE: ___ ___   19___ ___
                       MONTH   YEAR

    ____Time since _____days   weeks   months   years   **AGO**   **Go to E4**
                           (Circle correct time since)

    ____98 DK ⇨   **ASK Q.E3a**
    ____99 RF

E3a **If DK then probe:** Was it less than 1 year ago, at least 1 year but less than 2 years ago, or 2 or more years ago?

    ____1 less than 1 year ago
    ____2 at least 1 year but less than 2 years ago
    ____3 2 or more years ago
    ____98 DK
    ____99 RF

E4 Where was this mammogram done? In a private doctor's office, a clinic, a hospital, a mammography van or some other place? [PROBE IF NECESSARY. INCLUDE HOSPITAL BASED MAMMOGRAPHY FACILITIES, SUCH AS RADIOLOGY DEPARTMENTS, UNDER HOSPITAL]

_____1 doctor's office
_____2 clinic
_____3 hospital
_____4 mammography van
_____5 other [Specify]_____
_____98 DK
_____99 RF

E5 What is the name and address (location) of this (office, clinic, hospital, van, facility) where you had this mammogram? [IT IS IMPORTANT TO BE AS SPECIFIC AS POSSIBLE ON THE NAME AND LOCATION. Interviewer: DO NOT ABBREVIATE]

Name _____

Address_____

City _____

State_____

_____98 DK
_____99 RF

E6 Did you go for your last mammogram because of a health problem or just as part of a routine check-up?

_____1 health problem ⇨ [ASK E7]

_____2 routine check-up ⎫
_____98 DK   ⎬ [GO TO E8]
_____99 RF   ⎭

E7   What was the problem?   [MULTIPLE RECORD IF NECESSARY- DO NOT READ OPTIONS]

____1 discharge
____2 lumps
____3 pain
____4 soreness
____5 swelling   GO TO E9
____6 thickness
____7 other (SPECIFY) _____
____98 DK
____99 RF

E8   Why did you decide to have this mammogram? Was it because. . .[MULTIPLE RECORD IF NECESSARY]

____1 It had been a year or longer since you had one
____2 You never had one and thought you should
____3 A friend suggested it
____4 A family member suggested it
____5 Of something you saw, heard or read
____6 Of a doctor or nurse's advice
____7 Some other reason (Specify)_____

_____

____98 DK
____99 RF

E9   How many mammograms have you had in the last 10 years?

____ ____ mammograms

____98 DK
____99 RF

E10   Have you ever gone to get a mammogram without a doctor ordering it?

____1 yes
____2 no
____98 DK
____99 RF

E11 Have you ever asked a doctor to order a mammogram for you?

_____1 yes
_____2 no
_____98 DK
_____99 RF

E12 Has a doctor ever recommended you get a mammogram but you didn't get it?

_____1 yes
_____2 no
_____98 DK
_____99 RF

[Ask QE13 if QE3 is more than or equal to 2 years; Go to E14 if E3 is less than 2 years, DK or RF]

E13 What is the most important reason why you have (never had a mammogram/not had a mammogram in the past two years)?

_____1 no reason/never thought about it/didn't know I should
_____2 not needed/haven't had any problems
_____3 put it off/laziness
_____4 costs too much/no insurance
_____5 doctor didn't recommend it
_____6 don't go to or don't like doctors
_____7 afraid exam would be painful
_____8 afraid x-rays would be harmful to my health
_____9 afraid to find out I have cancer
_____10 Other **(SPECIFY)**_____

_____

_____98 DK
_____99 RF

E14 How likely is it that you will have a mammogram in the next 12 months? Would you say it is..

_____1 very likely
_____2 somewhat likely
_____3 not very likely
_____4 not likely at all
_____98 DK
_____99 RF

E15 Have any of your family members ever encouraged you to have a mammogram?

____1 yes ⇨ **ASK E15a**

____2 no ⎫
____98 DK ⎬ **Go to E16**
____99 RF ⎭

E15a Which family members have ever encouraged you to have a mammogram?
PROBE AFTER EACH RESPONSE: "Has anyone else encouraged you to have a mammogram?" [MULTIPLE RECORD IF NECESSARY]

____1 husband
____2 daughter
____3 mother
____4 sister
____5 son
____6 daughter-in-law
____7 granddaughter
____8 niece
____9 another family member (**SPECIFY RELATIONSHIP**)_____
____98 DK
____99 RF

E16 Has anyone other than a family member ever encouraged you to have a mammogram?

____1 yes ⇨ **ASK E16a**

____2 no ⎫
____98 DK ⎬ **GO TO E17**
____99 RF ⎭

E16a Other than a family member, who has encouraged you to have a mammogram?
PROBE AFTER EACH RESPONSE: "Has anyone else encouraged you to have a mammogram?" [MULTIPLE RECORD IF NECESSARY]

____1 a friend
____2 a doctor
____3 a nurse
____4 another health professional
____5 someone else (**SPECIFY RELATIONSHIP**) _____
____6 no one
____98 DK
____99 RF

E17 How likely would you be to go for a mammogram...**[READ EACH QUESTION]**
Would you be...; **[SHOW CARD]**

	very likely	somewhat likely	not very likely	not at all likely	DK	RF
a. Without having a problem or without being asked by a doctor?						
b. If you were urged by a church program?						
c. **[SKIP IF NOT MARRIED IN QA6]** if your husband suggested you get one?						
d. if any other relative or family member suggested you get one?						
e. if a friend recommended that you get one?						
f. if a doctor recommended that you get one?						

E18 Is there anything else that would motivate you to get a mammogram?

_____1 yes, **(SPECIFY)**_____

_____

_____2 no
_____98 DK
_____99 RF

E19 What do you consider to be the main obstacle for women your age to get a mammogram?

_____1 no reason/never thought about it
_____2 not needed/haven't had any problems
_____3 put it off/laziness
_____4 costs too much/no insurance
_____5 doctor didn't recommend it
_____6 don't go to or don't like doctors
_____7 afraid exam would be painful
_____8 afraid x-rays would be harmful to health
_____9 afraid to find out they have cancer
_____10 unaware of benefits of screening
_____11 Other, (**SPECIFY**)_____

_____

_____98 DK
_____99 RF

BREAST PHYSICAL EXAMS

The next set of questions are about breast (physical) exams. A breast physical exam is when the breast is felt for lumps by a doctor or other health professional.

E20 Have you ever had a breast physical examination done by a doctor or other health professional?

    ____1 yes ⇨ **ASK E21**

    ____2 no)
    ____98 DK) **(GO TO E22)**
    ____99 RF

E21 When did you have your most recent breast physical exam?

    ____SPECIFIED DATE: ___ ___ 19___ ___
                       MONTH   YEAR

    ____Time since _____days weeks months years **AGO** } Go to E22
                       (Circle correct time since)

    ____98 DK ⇨ **ASK Q.E21a**
    ____99 RF

E21a **If DK then probe:** Was it less than 1 year ago, at least 1 year but less than 2 years ago, or 2 or more years ago?

    ____1 less than 1 year ago
    ____2 at least 1 year but less than 2 years ago
    ____3 2 or more years ago
    ____98 DK
    ____99 RF

· BREAST SELF EXAMINATION

E22 Do you examine your breasts for lumps?

_____1 yes ⇨ **Ask Q.E23**

_____2 no ⎤
_____98 DK ⎦ **[GO TO F1]**
_____99 RF

E23 About how often do you examine your breasts for lumps?

___ ___ (number of times) per (day   week   month   year)
(Circle correct time)

_____5 never
_____98 DK
_____99 RF

E24 How did you learn how to examine your breasts? **[Check all that apply]**

_____1 doctor showed me
_____2 nurse showed me
_____3 friend showed me
_____4 other health professional showed me
_____5 learned in a class/meeting
_____6 read in a book, pamphlet, etc.
_____7 saw a television program
_____8 saw a video
_____9 my mother showed me
_____10 my sister showed me
_____11 my daughter showed me
_____12 other female relative showed me
_____13 other **(SPECIFY)**_____
_____98 DK
_____99 RF

F. PAP SMEARS

F1   A pap smear is a routine test in which a doctor examines the cervix to check for cancer of the cervix. Have you ever had a pap smear?

_____1 yes, have had ⇨ **ASK F2**

_____2 no, have not had ⎫
_____98 DK   ⎬ **(GO TO G1)**
_____99 RF   ⎭

F2   How many pap smears have you had in the past 10 years?

___ ___ pap smears

_____98 DK
_____99 RF

F3   When did you have your (most recent) pap smear?

_____SPECIFIED DATE: ___ ___   19___ ___
　　　　　　　　　　　　　　 MONTH　　　YEAR   ⎫
　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　 ⎬ **Go to F4**
_____Time since _____days   weeks   months   years   **AGO** ⎭
　　　　　　　　　　　(Circle correct time since)
_____98 DK ⇨ **ASK Q.F3a**
_____99 RF

F3a   **If DK then probe:** Was it less than 1 year ago, at least 1 year but less than 2 years ago, or 2 or more years ago?

_____1 less than 1 year ago
_____2 at least 1 year but less than 2 years ago
_____3 2 or more years ago
_____98 DK
_____99 RF

F4   Was your last pap smear done because of a health problem or just as part of a routine check-up?

_____1 health problem ⇨ **Ask Q.F5**

_____2 routine check-up ⎫
_____98 DK   ⎬ **(GO TO G1)**
_____99 RF   ⎭

F5   What was the problem? [MULIPLE RECORD]

_____1 bleeding
_____2 burning
_____3 discharge
_____4 infection
_____5 itching
_____6 pain
_____7 other (SPECIFY)_____
_____98 DK
_____99 RF

G. CANCER KNOWLEDGE/AWARENESS

Now I would like to ask you a few questions about breast cancer in general. There are no right or wrong responses. We care about your opinions.

G1   What is the age doctors recommend a woman should start having mammograms?
[ENCOURAGE RESPONDENT TO GUESS EVEN IF SHE IS NOT SURE OR DOESN'T KNOW]

_____ _____ years old

OR

_____1 when she starts having periods
_____2 when she stops having periods
_____3 controversial - doctors do not agree
_____4 other **(SPECIFY)**_____
_____98 DK
_____99 RF

G2   How often do you think a woman of your age should have a mammogram?

_____1 yearly
_____2 every 2 years
_____3 when the doctor says so
_____4 never
_____5 other **(SPECIFY)**_____
_____98 DK
_____99 RF

G3   Is there an age when women no longer need to have mammograms?
[ENCOURAGE RESPONDENT TO GUESS EVEN IF SHE IS NOT SURE OR DOESN'T KNOW]

_____ _____ years old

OR

_____1 when menstrual periods stop
_____2 when she is no longer sexually active
_____3 there is no age limit
_____98 DK
_____99 RF

G4   If a close family member had cancer, should only that person be told, only the family, both the person and the family, or should no one be told?

_____1 only the person her/himself
_____2 only other family members
_____3 both the person and the family
_____4 no one
_____5 depends on situation
_____98 DK
_____99 RF

G5   What are a person's chances of surviving cancer of the breast if it is found and treated early? Would you say

_____1 good : greater than a 50-50 chance
_____2 fair : about a 50-50 chance
_____3 poor : less than a 50-50 chance
_____98 DK
_____99 RF

G6   How much do you worry about getting breast cancer? Would you say

_____1 a lot
_____2 some
_____3 not at all
_____98 DK
_____99 RF

G7   Do you worry about any of your female relatives (e.g., daughters, daughters-in-law, nieces, sisters, mother, aunts) getting breast cancer?

_____1 Yes
_____2 No
_____98 DK
_____99 RF

H. RELIANCE AND SOLIDARITY: PART 1

H1   Among the members of your family, who do you rely on the most for advice on health matters?

Name:_____   Relationship:_____

Age:_____   Gender_____

_____0 No family member identified
_____98 DK
_____99 RF

IF SUBJECT DOES NOT IDENTIFY A FAMILY MEMBER OR IDENTIFIES HUSBAND, GO TO Q I.1

H2   Does _____(NAME OF PERSON) live within 1 hour of you?

_____1 yes, lives within 1 hour from subject
_____2 no, does not live within 1 hour from subject
_____98 DK
_____99 RF

H3   Where does _____(NAME OF PERSON) live? [PROMPT FOR TOWN]

___ ___ REFER TO LIST OF TOWNS

_____OTHER TOWN (SPECIFY; DO NOT ABBREVIATE)_____

_____98 DK
_____99 RF

H4   About how often have you seen _____(NAME OF PERSON) in the past month?

_____1 almost never or never
_____2 once or twice
_____3 about once a week
_____4 several times a week
_____5 almost every day or every day
_____98 DK
_____99 RF

H4a How often have you spoken with _____(NAME OF PERSON) by phone
in the past month?

_____1 almost never or never
_____2 once or twice
_____3 about once a week
_____4 several times a week
_____5 almost every day or every day
_____6 no phone
_____98 DK
_____99 RF

H5 Where does _____(NAME) go for most of (her/his) health care?

_____1 doctor's office
_____2 hospital emergency room
_____3 hospital outpatient clinic
_____4 public health clinic
_____5 HMO/prepaid group practice
_____6 clinic at any work place
_____7 no partcular place
_____8 Hasn't needed health care
_____9 other (SPECIFY)_____
_____98 DK
_____99 RF

I. LIVING ARRANGEMENT

I1   Including yourself, how many people live in this household? **[COUNT EVERYONE LIVING IN HOUSEHOLD, INCLUDING CHILDREN AND INDIVIDUALS NOT RELATED TO SUBJECT]**

___ ___ (people)

___98 DK
___99 RF

IF ONLY ONE PERSON IN Q.I1, GO TO Q.J1 ALL OTHERS ASK Q.I2

I2   How many of these are under 21 years of age?

_____ _____number under 21

___98 DK
___99 RF

J. FAMILY CONTACTS/SOCIAL SUPPORT

Now I am going to ask you a few questions about your family and friends.

J1   How many living sons do you have, including adopted, foster and step-sons?

___ ___ number of sons

___0 None⎫
___98 DK ⎬ **Go to J2**
___99 RF ⎭

J1a   How many of your sons are **[If 1 son, ask "Is your son..."]** less than 18 years of age?

_____ _____ . Less than 18 years of age

___98 DK
___99 RF

J1b   How many of your sons are [If 1 son, ask "Is your son..."] 18 - 35 years of age?

_____ _____ 18-35 years of age

____98 DK
____99 RF

J1c   How many of your sons are [If 1 son, ask "Is your son..."] older than 35 years of age?

_____ _____ >35 years of age

____98 DK
____99 RF

J1d   How many of your sons have you seen in the last month?

_____ _____ sons seen in last month

____98 DK
____99 RF

J1e   How many of your sons have you talked to by phone in the last month?

_____ _____ sons talked to by phone in last month

____98 DK
____99 RF

J2   How many living daughters do you have, including adopted, foster and step-daughters?

___ ___ number of daughters

____0 None
____98 DK   GO TO K1
____99 RF

J2a   How many of your daughters are [If 1 daughter, ask "Is your daughter..."] less than 18 years of age?

_____ _____Less than 18 years of age

____0 None
____98 DK
____99 RF

J2b   How many of your daughters are [If 1 daughter, ask "Is your daughter..."] 18-35 years of age?

_____ _____ 18-35 years of age

____98 DK
____99 RF

J2c   How many of your daughters are [If 1 daughter, ask "Is your daughter..."] older than 35 years of age?

____ ____>35 years of age

____98 DK
____99 RF

J2d   Of these [INSERT # FROM J2b] daughters 18-35, how many live within hour from you?

____ ____number of daughters < 1 hour

____98 DK
____99 RF

J2e   How many of your daughters have you seen in the last month?

____ ____daughters seen in last month

____98 DK
____99 RF

J2f   How many of your daughters have you talked to by phone in the past month?

_____ _____daughters talked to by phone in last month

____98 DK
____99 RF

K. RELIANCE AND SOLIDARITY: PART 2

K1   How many other female family members between the ages of 18 - 35 do you have? [INCLUDING DAUGHTERS-IN-LAW, NIECES, SISTERS, AND GOD-DAUGHTERS]

_____ _____ _____ number of female family members

_____0 None)
_____98 DK } · **GO TO K3**
_____99 RF

K2   Of these **[Insert # from K1]** female family members, how many live/does this family member live within 1 hour from you?

_____ _____ _____number of female family members

_____98 DK
_____99 RF

K3   With how many of your relatives do you feel **very close** to? Include parents, husband, children, brothers or sisters, aunts or uncles, or other relatives with whom you feel very close to.

_____ _____ number of very close relatives

_____98 DK
_____99 RF

K4   With how many of your relatives do you feel **somewhat close** to? Include parents, husband, children, brothers or sisters, aunts or uncles, or other relatives with whom you feel somewhat close to.

_____ _____ number of somewhat close relatives

_____98 DK
_____99 RF

K5   In general, how many close friends do you have, other than relatives? (People with whom you feel comfortable, with whom you can talk about private matters, and whom you can call to ask for help)

____ ____ number of close friends

____98 DK
____99 RF

K6   In general, how many other people, excluding people you have mentioned, do you feel that you can talk to or ask for advice or information? (People you work with, from church, other activities)

____ ____ number of other people

____98 DK
____99 RF

L. RELIANCE AND SOLIDARITY: PART 3

L1   How many female friends between the ages of 18 and 35 do you have?

_____ _____ _____ number of female friends 18-35

_____ 0 None }
_____ 98 DK } GO TO L3
_____ 99 RF

L2   How many of these **[insert # from L1]** friends/does this friend live within 1 hour from you?

_____ _____ _____ number within 1 hour

_____ 0 None
_____ 98 DK
_____ 99 RF

L3   **[IF PERSON MENTIONED IN H1 IS A FEMALE, 18 - 35 YEARS OF AGE AND LIVES WITHIN 1 HOUR FROM SUBJECT (H2=1), THEN GO TO L5]**

_____ 1. [If J2d + K2 + L2 = 0 then go to M1]

_____ 2. [If J2d + K2 + L2 = 1 THEN ASK L3a]

_____ 3. [If J2d + K2 + L2 >1 THEN ASK L3b]

L3a   What is the age and name of your daughter **(J2d=1)**, female relative **(K2=1)**, or female friend **(L2=1)** who is between the ages of 18 and 35 and lives within 1 hour from you?

Name:_____   Age:_____

Relationship:_____

_____ 98 DK }
_____ 99 RF } GO TO L4

L3b   Of the **[insert # J2d]** daughter(s), the **[insert # from K2]** female relative(s) and **[insert # from L2]** female friend(s) you have mentioned who are between the ages of 18 and 35 and live within 1 hour from you, whom do you rely on the most for advice on health matters,? **[IF SUBJECT SAYS THEY DON'T RELY ON ANY, ASK WHO THEY WOULD RELY ON IF THEY HAD TO; IF UNABLE TO NAME SOMEONE GO TO M1 IF MARRIED; IF NOT MARRIED GO TO N1]**

Name:_____   Age:_____

Relationship:_____

____0 No one
____98 DK
____99 RF

L4   Where does _____(NAME OF PERSON) live? **[PROMPT FOR TOWN]**

___ ___ **REFER TO LIST OF TOWNS**

____Other **(SPECIFY; DO NOT ABBREVIATE)**_____

____98 DK
____99 RF

AFFECTUAL SOLIDARITY

L5   Generally, how well do you and _____(NAME) get along together?

____1 extremely well
____2 very well
____3 pretty well
____4 somewhat
____5 not too well
____6 not well
____98 DK
____99 RF

ASSOCIATIONAL SOLIDARITY

L6 How often do you do the following with _____ (NAME OF PERSON)? [SHOW CARD]

	Almost never or never	About once a year	Several times a year	Every other month or so	About once a month	About once a week	Several times a week	Almost every day	DK	RF
a. Have recreation outside the home (movies, picnics, swimming, trips etc...)?	1	2	3	4	5	6	7	8	98	99
b. Have visits just to talk?	1	2	3	4	5	6	7	8	98	99
c. Have family gatherings like birthdays, holidays or other special occasions where a lot of family members get together?	1	2	3	4	5	6	7	8	98	99
d. Talk over things that are important to you?	1	2	3	4	5	6	7	8	98	99
e. Go to religious activities of any kind?	1	2	3	4	5	6	7	8	98	99
f. Telephone each other?[1]	1	2	3	4	5	6	7	8	98	99
g. Have dinner together?	1	2	3	4	5	6	7	8	98	99

1 - IF NO TELEPHONE = CODE 9

L7   How often do you

a. Help _____(NAME) out with her chores or errands? [SHOW CARD]

_____1 almost never or never
_____2 about once a year
_____3 several times a year
_____4 every other month or so
_____5 about once a month
_____6 about once a week
_____7 several times a week
_____8 almost every day
_____98 DK
_____99 RF

b. How often does _____(NAME) help you out with chores or errands?
   [SHOW CARD]

_____1 almost never or never
_____2 about once a year
_____3 several times a year
_____4 every other month or so
_____5 about once a month
_____6 about once a week
_____7 several times a week
_____8 almost every day
_____98 DK
_____99 RF

L8   How often do you help _____(NAME) when she is sick?

_____1 every time she is sick
_____2 usually when she is sick
_____3 sometimes when she is sick
_____4 never
_____5 never sick
_____98 DK
_____99 RF

L9   How often does _____(NAME) help you when you are sick?

      _____1 every time I am sick
      _____2 usually when I am sick
      _____3 sometimes when I am sick
      _____4 never when I am sick
      _____5 never sick
      _____98 DK
      _____99 RF

L10   In the past year, have you given _____(NAME) any financial help?

      _____1 yes, have given financial help ⇨ **Ask L10a**

      _____2 no, have not given help
      _____98 DK   } **Go to L11**
      _____99 RF

L10a Have you given **(NAME)** financial help regularly, occasionally, or only rarely?

      _____1 regularly
      _____2 occasionally
      _____3 only rarely
      _____98 DK
      _____99 RF

L11   In the past year, have you received any financial help from_____(NAME)?

      _____1 yes, have received financial help ⇨ **Ask L11a**

      _____2 no, have not received help
      _____98 DK   } **Go to L12**
      _____99 RF

L11a Have you received financial help from **(NAME)** regularly, occasionally, or only rarely

      _____1 regularly
      _____2 occasionally
      _____3 only rarely
      _____98 DK
      _____99 RF

L12 How often do you give any advice to _____(NAME) regarding health?

    _____1 almost never or never
    _____2 about once a year
    _____3 several times a year
    _____4 every other month or so
    _____5 about once a month
    _____6 about once a week
    _____7 several times a week
    _____8 almost every day
    _____98 DK
    _____99 RF

L13 How often does _____(NAME) give you any advice regarding your health?

    _____1 almost never or never
    _____2 about once a year
    _____3 several times a year
    _____4 every other month or so
    _____5 about once a month
    _____6 about once a week
    _____7 several times a week
    _____8 almost every day
    _____98 DK
    _____99 RF

L14 Do you always follow her advice, almost always, sometimes, almost never, or never?

    _____1 always
    _____2 almost always
    _____3 sometimes
    _____4 almost never
    _____5 never
    _____98 DK
    _____99 RF

L14a How likely would you be to go for a mammogram if _____(name) suggested you get one? Would you be. . .

    ____1 very likely
    ____2 somewhat likely
    ____3 not very likely
    ____4 not at all likely
    ____98 DK
    ____99 RF

L15 Where does _____(NAME) go for most of her health care?

    ____0 nowhere ⇨ **GO TO INSTRUCTIONS ABOVE M1**

    ____1 no usual place ⇨ **ASK L15a AS "PLACE GONE MOST OFTEN"**

    ____2 doctor's office
    ____3 hospital outpatient clinic
    ____4 hospital emergency room
    ____5 clinic
    ____6 haven't needed health care ⇨ **GO TO INSTRUCTIONS ABOVE M1**
    ____7 other _____
    ____98 DK
    ____99 RF

L15a What is the name of this place where_____(NAME) goes for her health care? [INTERVIEWER: PROBE FOR FULL NAME. DO NOT ABBREVIATE]

_____

_____

    ____98 DK
    ____99 RF

IF RESPONDENT NOT CURRENTLY MARRIED, SKIP TO Q.N1

M. MARITAL SATISFACTION

Now, I am going to read a list of things that husbands and wives may do when they are together. For each, could you tell me how often it happens between you and your husband. **[SHOW CARD]**

		Hardly ever or never	Not usually but sometimes	Fairly often	Quite often	Very often or all the time	DK	RF
M1	You calmly discuss something together.	1	2	3	4	5	98	99
M2	One of you is sarcastic.	1	2	3	4	5	98	99
M3	You work together on something (dishes, yardwork, etc.).	1	2	3	4	5	98	99
M4	One of you refuses to talk in a normal manner.	1	2	3	4	5	98	99
M5	You laugh together.	1	2	3	4	5	98	99
M6	You have an interesting exchange of ideas.	1	2	3	4	5	98	99
M7	You disagree about something important.	1	2	3	4	5	98	99
M8	One of you becomes critical or belittling.	1	2	3	4	5	98	99
M9	You have a good time together.	1	2	3	4	5	98	99
M10	One of you becomes angry.	1	2	3	4	5	98	99

M11 Overall, how would you rate your HUSBAND'S health -- excellent, good, fair, or poor?

_____1 excellent
_____2 good
_____3 fair
_____4 poor
_____98 DK
_____99 DF

M12 When your husband wants help with care for a physical health problem, where does he usually go?

_____0 nowhere
_____1 no usual place
_____2 doctor's office
_____3 hospital outpatient clinic
_____4 hospital emergency room
_____5 clinic
_____6 hasn't needed health care
_____7 other **(SPECIFY)**_____
_____98 DK
_____99 RF

M13 How often do you accompany your husband when he goes to see a doctor? Would you say...

_____1 Always
_____2 Usually
_____3 Sometimes
_____4 Rarely
_____5 Never
_____98 DK
_____99 RF

M13a How often does your husband accompany you when you see a doctor? Would you say...

_____1 Always
_____2 Usually
_____3 Sometimes
_____4 Rarely
_____5 Never
_____98 DK
99 RF

M14 How often do you and your husband discuss health problems with one another?
Would you say...

    ____1 Always
    ____2 Usually
    ____3 Sometimes
    ____4 Rarely
    ____5 Never
    ____98 DK
    ____99 RF

N. ACCULTURATION - CUELLAR and HAZUDA SCALES

In this next part of the interview, I will be asking some more questions about your background, attitudes, and beliefs. First, I'm going to ask you about your use of language, in particular, English and Spanish, in various situations.

N1   What was the first language that you learned to speak?

_____1 English
_____2 English and Spanish simultaneously
_____3 Spanish
_____4 Other **(Specify)**_____
_____98 DK
_____99 RF

N2   What language was spoken in your home when you were a child? Would you say: **[SHOW CARD]**

_____1 Only English
_____2 Mostly English
_____3 Spanish and English equally
_____4 Mostly Spanish
_____5 Only Spanish
_____6 Other **(Specify)**_____
_____98 DK
_____99 RF

N3 In your opinion, how well do you: **[SHOW CARD]**

	Very Well	Pretty Well	Not Too Well	Not At All Well	DK	RF
Understand spoken English						
Speak English						
Read English						
Write English						
Understand spoken Spanish						
Speak Spanish						
Read Spanish						
Write Spanish						

N4 What language do you usually use: [SHOW CARD]

	Only English	Mostly English	Both Equally	Mostly Spanish	Only Spanish	DK	RF	NA
a. With your spouse?								
b. With your children?								-
c. With your parents?								
d. With most of your friends?								
e. With most of your neighbors?								
f. With most of the people at work?								
g. At family gatherings, such as Christmas or other holidays?								

N5 In what language are the: [SHOW CARD]

	Only English	Mostly English	Both Equally	Mostly Spanish	Only Spanish	DK	RF	NA
a. TV programs you watch								
b. Radio stations you listen to								
c. Books and magazines you read								

N6 How important do you feel it is for (your) children to know something about the history of Mexico? Would you say . . .?

     ____1 very important
     ____2 somewhat important
     ____4 not very important
     ____5 not important at all

     ____3 not sure
     ____99 refused

N7 How important do you feel it is for (your) children to follow Mexican customs and ways of life?

     ____1 very important
     ____2 somewhat important
     ____4 not very important
     ____5 not important at all

     ____3 not sure
     ____99 refused

N8 How important do you feel it is for (your) children to celebrate Mexican holidays such as Cinco de Mayo or El Diesyseis de Septiembre?

     ____1 very important
     ____2 somewhat important
     ____4 not very important
     ____5 not important at all

     ____3 not sure
     ____99 refused

Now I would like you to turn your attention to some of the preferences and beliefs that you have about life in general. The first questions ask about family life - the way that families are organized and the way that members of a family work with one another. Think carefully about each statement that I read and then tell me **(SHOW CARD)** whether you strongly agree with the statement, agree, disagree or strongly disagree with the statement. There are no right or wrong answers; we would just like to know how you yourself feel about these statements. The first statement is:

N9   Knowing your family ancestry or lineage, that is, tracing your family tree, is an important part of family life. Would you say   you...

_____1 strongly agree
_____2 agree
_____4 disagree
_____5 strongly disagree

_____3 not sure
_____99 RF

N10 It is important to know your cousins, aunts, and uncles and to have a close relationship with them.

_____1 strongly agree
_____2 agree
_____4 disagree
_____5 strongly disagree

_____3 not sure
_____99 RF

N11 Brothers have a responsibility to protect their sisters while they are growing up.

_____1 strongly agree
_____2 agree
_____4 disagree
_____5 strongly disagree

_____3 not sure
_____99 RF

N12 A person should remember other family members who have passed away on the anniversary of their death, All Soul's Day, or other special occasions.

_____1 strongly agree
_____2 agree
_____4 disagree
_____5 strongly disagree

_____3 not sure
_____99 RF

N13 In the absence of the father, the most important decisions should be made by the eldest son rather than the mother, if the son is old enough.

_____1 strongly agree
_____2 agree
_____4 disagree
_____5 strongly disagree

_____3 not sure
_____99 RF

N14 If they could live anywhere they wanted to, married children should live close to their parents so that they can help each other.

_____1 strongly agree
_____2 agree
_____4 disagree
_____5 strongly disagree

_____3 not sure
_____99 RF

N15 While they're growing up, sisters have an obligation to respect their brothers' authority.

_____1 strongly agree
_____2 agree
_____4 disagree
_____5 strongly disagree

_____3 not sure
_____99 RF

Now I would like to ask you some questions about your neighbors and friends when you were growing up.

N16   When you were growing up, were your <u>neighbors</u> mostly Mexican or Mexican-American, mostly Anglo, or about equal numbers of each?

     ____1 Mostly Mexican or Mexican-American
     ____2 Mostly Anglo
     ____3 About equal numbers of each
     ____4 Other **(Specify)**_____
     ____98 DK
     ____99 RF

N17   When you were growing up, were your <u>school mates</u> mostly Mexican or Mexican-American, mostly Anglo, or about equal numbers of each?

     ____1 Mostly Mexican or Mexican-American
     ____2 Mostly Anglo
     ____3 About equal numbers of each
     ____4 Other **(Specify)**_____
     ____98 DK
     ____99 RF

N18   When you were growing up, were your <u>close personal friends</u> mostly Mexican or Mexican-American, mostly Anglo, or about equal numbers of each?

     ____1 Mostly Mexican or Mexican-American
     ____2 Mostly Anglo
     ____3 About equal numbers of each
     ____4 Other **(Specify)**_____
     ____98 DK
     ____99 RF

Now I would like to ask you some questions about the people you see most often, day to day. **[IF NEVER WORKED GO TO N20]**

N19   (Are the people with whom you work closely on the job/Are the people with whom you worked closely on your last job) mostly Mexican or Mexican-American, mostly Anglo, or about equal numbers of each?

____1 Mostly Mexican or Mexican-American
____2 Mostly Anglo
____3 About equal numbers of each
____4 Other **(Specify)** _____
____5 Never worked
____98 don't know
____99 refused

N20   Throughout most of your adult life, have your neighbors been mostly Mexican or Mexican-American, mostly Anglo, or about equal numbers of each?

____1 Mostly Mexican or Mexican-American
____2 Mostly Anglo
____3 About equal numbers of each
____4 other **(Specify)**_____
____98 don't know
____99 refused

N21   Throughout your adult life, have your close, personal friends been mostly Mexican or Mexican-American, mostly Anglo, or about equal numbers of each?

____1 Mostly Mexican or Mexican American
____2 Mostly Anglo
____3 about equal numbers of each
____4 other **(Specify)**_____
____98 don't know
____99 refused

P. FAMILISM - SABOGAL SCALE

Now I am going to read you some statements about parents and children. After I read each statement, please tell me if you very much disagree, disagree, are not sure, agree or very much agree with the statement.
[SHOW CARD]

	Very Much Dis-agree	Dis-agree	Not Sure	Agree	Very Much Agree	DK	RF
1. When one has problems, one can count on the help of relatives	1	2	3	4	5	98	99
2. The family should consult close relatives (uncles, aunts) concerning its important decisions	1	2	3	4	5	98	99
3. A person should share his/her home with uncles, aunts or first cousins if they are in need	1	2	3	4	5	98	99
4. Children should live in their parents' house until they get married	1	2	3	4	5	98	99
5. I would help within my means if a relative told me that she/he is in financial difficulty	1	2	3	4	5	98	99
6. One should be embarrassed about the bad things done by his/her brothers or sisters	1	2	3	4	5	98	99
7. When someone has problems s/he can count on help from his/her relatives	1	2	3	4	5	98	99
8. One of the most important goals in life is to have children	1	2	3	4	5	98	99

	Very Much Dis-agree	Dis-agree	Not Sure	Agree	Very Much Agree	DK	RF
9. One should have the hope of living long enough to see his/her grandchildren grow up	1	2	3	4	5	98	99
10. One should help economically with the support of younger brothers and sisters	1	2	3	4	5	98	99
11. Aging parents should live with their relatives	1	2	3	4	5	98	99
12. Much of what a son or daughter does should be done to please the parents	1	2	3	4	5	98	99
13. One can count on help from his/her relatives to solve most problems	1	2	3	4	5	98	99
14. One should make great sacrifices in order to guarantee a good education for his/her children	1	2	3	4	5	98	99

Q. FATALISM

Now, I am going to make some statements about how people feel about life. After I read each statement, please decide whether it is true as applied to you or false as applied to you. Not every statement is completely true or completely false for everyone, but if it is mostly true or mostly false for you, please tell me. Remember to give your own opinion.

Q1   It is more important to enjoy life now than to plan for the future.

_____1 True/mostly true
_____2 False/mostly false
_____98 don't know
_____99 refused

Q2   People die when it is their time and there is not much that can be done about it.

_____1 True/mostly true
_____2 False/mostly false
_____98 don't know
_____99 refused

Q3   We must live for the present, who knows what the future may bring.

_____1 True/mostly true
_____2 False/mostly false
_____98 don't know
_____99 refused

Q4   If my doctor said I was disabled, I would believe it even if I disagreed.

_____1 True/mostly true
_____2 False/mostly false
_____98 don't know
_____99 refused

Q5   It is not always wise to plan too far ahead because many things turn out to be a matter of good and bad fortune anyway.

_____1 True/mostly true
_____2 False/mostly false
_____98 don't know
_____99 refused

Q6   It doesn't do any good to try to change the future because the future is in the hands of God.

     ____1 True/mostly true
     ____2 False/mostly false
     ____98 don't know
     ____99 refused

Q7   When I make plans, I am almost certain I can make them work.

     ____1 True/mostly true
     ____2 False/mostly false
     ____98 don't know
     ____99 refused

Q8   I sometimes feel that someone controls me.

     ____1 True/mostly true
     ____2 False/mostly false
     ____98 don't know
     ____99 refused

R. INCOME AND INSURANCE

Finally, I'd like to ask you a few questions about your income and insurance.

R1 How much difficulty do you have in meeting monthly payments on your bills -- a great deal, some, a little, or none? **USE SHOW CARD**

_____1 A great deal
_____2 Some
_____3 A little
_____4 None
_____98 DK
_____99 RF

R2 At the end of the month, do you usually end up with some money left over, just enough to make ends meet, or not enough to make ends meet? **USE SHOW CARD**

_____1 Some money left over
_____2 Just enough to make ends meet
_____3 Not enough money to make ends meet
_____98 DK
_____99 RF

R3 **(SHOW RESPONDENT CARD)** Please look at this card and tell me about how much was your yearly <u>HOUSEHOLD</u> income for the past year? Household income includes income from all individuals living in the household at the present time. Include income from all sources, such as wages, salaries, Social Security, retirement benefits, help from relatives, rent from property and so forth.

_____01 less than $1000
_____02 1,000-4,999
_____03 5,000-9,999
_____04 10,000-14,999
_____05 15,000-19,999
_____06 20,000-24,999
_____07 25,000-29,999
_____08 30,000-34,999
_____09 35,000-39,999
_____10 40,000-49,999
_____11 50,000 and over
_____98 DK
_____99 RF

R4 Are you covered by Medicare?

_____1 yes ⇨ **ASK Q.R5**

_____2 no ⎫
_____98 DK ⎬ **GO TO Q.R7**
_____99 RF ⎭

R5 Do you have Part A of Medicare that covers hospital bills, Part B that covers doctors bills, or both?

_____1 Part A only
_____2 Part B only
_____3 Both Parts
_____98 DK
_____99 RF

R6 Could I please see your Medicare card?

_____1 yes **(RECORD NUMBER)** __ __ __ __ __ __ __ __ __ __ __
_____2 no, don't have access to it
_____98 DK
_____99 no, refused

R7 Are you covered by Medicaid or any other public program such as welfare that pays all or part of your medical care?

_____1 yes
_____2 no
_____98 DK
_____99 RF

R8 Are you covered by any other health insurance plan (other than Medicare or Medicaid) such as Blue Cross/BlueShield, an HMO, or CHAMPUS?

_____1 yes
_____2 no
_____98 DK
_____99 RF

R9   For our confidencial records, may we please have your social security number?

_____1 yes (RECORD NUMBER) __ __ __-__ __-__ __ __ __
_____2 no, does not know number
_____3 no, does not have Social Security Card/number

_____98 DK
_____99 no, refused

[End of interview - Thank respondent and record end time]

Record end time: _____:_____am
                              pm

S. INTERVIEWER OBSERVATIONS

S1 Final status of respondent interview?

_____1 Complete
_____2 Incomplete, interviewer broke off
_____3 Incomplete, respondent broke off
_____4 Incomplete, other (SPECIFY)_____
_____5 Not applicable

S2 Was someone else present during the interview?

_____1 yes ⇨ **ASK S3**

_____2 no ⎫ **Go to S5**
_____98 DK ⎭

S3 What was this person's relationship to the respondent?

_____1 spouse or partner
_____2 son
_____3 daughter
_____4 son-in-law
_____5 daughter-in-law
_____6 grandchild
_____7 parent
_____8 brother
_____9 sister
_____10 nephew
_____11 niece
_____12 cousin
_____13 aunt
_____14 uncle
_____15 great grandchild
_____16 sister-in-law
_____17 brother-in-law
_____18 other relative (Specify)_____
_____19 friend
_____20 boarder or roomer
_____21 paid employee
_____22 all other (Specify)_____
_____98 DK
_____99 RF

S4   About what percentage of all responses to the questionnaire were provided by this other person rather than the respondent?

/___/___/___/ percent

____98 DK

S5   Type of dwelling **(CHOOSE ONE)**

____1 Detached single-family house
____2 Apartment (including duplexes)
____3 Trailer, mobile home
____4 Row house or townhouse, condominium
____98 DK

S6   Was this a retirement community or housing restricted solely for older adults?

____1 yes
____2 no
____98 DK

APPENDIX 3

Listing and Interviewing Results

Table 1: Summary of occupied, listed and vacant housing units, and coverage rates for each replicate and overall sample

	Rep[1] 1	Rep 2	Rep 3	Overall
A) # census units[2]	6619	3028	3385	13032
B) # housing units listed	6454	2790	3246	12490
C) # vacant/demolished	502	223	240	965
D) # listed occupied units (B - C)	5952	2567	3006	11525
E) Coverage rate (CR) $\frac{\text{\# listed occupied units}}{\text{\# census occupied units}}$	89.9%	84.8%	88.9%	88.4%

1 Rep refers to replicate in sampling design
2= Total number of units identified by 1990 Census

Table 2. Number of listed units w/completed interviews, number of eligible and ineligible subjects and, number of eligible subjects refused, and screening, interview, and response rates

	Rep 1	Rep 2	Rep 3	Overall
A) # units w/completed interviews	226	96	129	451
B) # units screened w/eligible (# complete + CB + RE)[1]	274	121	154	549
C) # units screened w/ineligible (#SO +SM +SA)[2]	5291	2379	2821	10491
D) No contact (NA +NE)[3]	384	61	27	472
E) Refused screening (RS)	3	6	4	13
F) Total units screened[4]	6454	2790	3246	12490
G) Screen rate (SR) $\frac{[B+C]}{\text{# listed occupied units}}$	93.5%	97.4%	99.0%	95.8%
H) Interview Rate (IR) $\frac{[A]}{B}$	82.8%	79.3%	83.8%	82.1%
I) Response rate (RR) SR x IR/100	77.4%	77.2%	83.0%	78.7%

1 CB=total number of callbacks; RE=total number of eligible who refused to be interviewed
2 SO=Screen out, no females in household; SM=no Mexican-American females in household; SA=Mexican-American females not 50-74 years of age
3 NA=unit accessible, no contact; NE=no access to housing unit
4 Total number of units screened = (# vacant + # units screened w/eligible + # units screened ineligible + # no contact + # refused screen)

Table 3. Expected vs. actual yield for completed segments

	Rep 1	Rep 2	Rep 3	Overall
A) Expected yield[1]	314.2	128.93	150.77	594
B) Actual yield[2]	274	121	154	549
C) Expected vs actual yield A/B	87.2%	93.8%	102.1%	92.4%

1 Expected yield = # expected completed interviews based on census block estimates for number of eligible Mexican-American women, 50-74 years of age

2 Actual yield = (# units w/completed interviews +RE+CB) - # completed=total number of completed interviews; CB=total number of callbacks; RE=total number of eligible who refused to be interviewed

Screening, Interview & Coverage Rates for Mammography Study

Rep 1:

\# Census housing units ⇨ 6619
\# Listed units ⇨ 6454
\# vacant/demolished/summer ⇨ 502

\# Listed occupied units (\# listed units - \# vacant/demolished) ⇨ 6454 - 502 = 5952

Coverage rate = $\dfrac{\text{\# listed occupied units}}{\text{\# census occupied units}} = \dfrac{5952}{6619} = 89.9\%$

\# screened units w/completed interviews ⇨ 226
\# CB (callbacks)[1] ⇨ 7
\# RE (eligible subjects who refused an interview) ⇨ 41

Screened units w/eligible subjects (comp + CB + RE) = 274

\# SO (Screen out, no females in household) ⇨ 615
\# SM (Screen out, no Mexican-American females in household) ⇨ 3781
\# SA (Screen out, Mexican-American females not 50-74 years of age) ⇨ 895

Screened units w/ineligible subjects (SO + SM + SA) = 5291

Screen rate (SR) $= \dfrac{\text{\# screened eligible + \# units screened ineligible}}{\text{\# occupied units}} = \dfrac{5565}{5952} = 93.5\%$

Interview rate (IR) $= \dfrac{\text{\# units w/completed interviews}}{\text{\# screened eligible}} = \dfrac{226}{274} = 82.8\%$

Response Rate = SR x IR/100 = 93.5 x 82.8/100 = **77.4%**

\# NA (Occupied & accessible unit, no contact) ⇨ 303
\# NE (Occupied, unaccessible unit, no contact) ⇨ 81

\# No contact (NA+ NE) = 384

RS (Refused to be screened) ⇨ 3

Total screened units:		
	Vacant/demolished	502
	Eligible	274
	Ineligible	5291
	No contact	384
	Refused screen	3
	Total	6454 = \# units listed

Rep 2:

Census housing units ⇨ 3028
Listed units ⇨ 2790
vacant/demolished/summer ⇨ 223

 # Listed occupied units (# listed units - # vacant/demolished) ⇨ 2790 - 223 = 2567

Coverage rate = $\dfrac{\text{\# listed occupied units}}{\text{\# census occupied units}} = \dfrac{2567}{3028} = 84.8\%$

screened units w/completed interviews ⇨96
CB (callbacks)[1] ⇨ 5
RE (eligible subjects who refused an interview) ⇨ 20

Screened units w/eligible subjects (comp + CB + RE) = 121

SO (Screen out, no females in household) ⇨ 268
SM (Screen out, no Mexican-American females in household) ⇨ 1686
SA (Screen out, Mexican-American females not 50-74 years of age) ⇨ 425

Screened units w/ineligible subjects (SO + SM + SA) = 2379

Screen rate (SR) = $\dfrac{\text{\# screened eligible + \# units screened}}{\text{\# occupied units}} = \dfrac{2500}{2567} = 97.4\%$

Interview rate (IR) = $\dfrac{\text{\# completed}}{\text{\# screened eligible}} = \dfrac{96}{121} = 79.3\%$

Response Rate = SR x IR/100 = 97.4 x 79.3/100 = **77.2%**

NA (Occupied & accessible unit, no contact) = 46
NE (Occupied, unaccessible unit, no contact) = 15

 # No contact (NA+ NE) = 61

RS (Refused to be screened) ⇨ 6

Total screened units:		
	Vacant/demolished	223
	Eligible	121
	Ineligible	2379
	No contact	61
	Refused screen	6
	Total	**2790** = # units listed

Rep 3:

\# Census housing units ⇨ 3385
\# Listed units ⇨ 3246
\# vacant/demolished/summer ⇨ 240

\# Listed occupied units (\# listed units - \# vacant/demolished) ⇨ 3246 - 240 = 3006

Coverage rate = $\dfrac{\text{\# listed occupied units}}{\text{\# census occupied units}}$ = $\dfrac{3006}{3385}$ = **88.9%**

\# Screened units w/completed interviews ⇨129
\# CB (callbacks) ⇨ 10
\# RE (eligible subjects who refused an interview) ⇨ 15

Screened units w/eligible subjects (comp + CB + RE) = 154

\# SO (Screen out, no females in household) ⇨ 263
\# SM (Screen out, no Mexican-American females in household) ⇨ 2046
\# SA (Screen out, Mexican-American females not 50-74 years of age) ⇨ 512

Screened units w/ineligible subjects (SO + SM + SA) = 2821

Screen rate (SR) = $\dfrac{\text{\# screened eligible + \# units screened}}{\text{\# occupied units}}$ = $\dfrac{2975}{3006}$ = **99.0%**

Interview rate (IR) = $\dfrac{\text{\# completed}}{\text{\# screened eligible}}$ = $\dfrac{129}{154}$ = **83.8%**

Response Rate = SR x IR/100 = 99.0 x 83.8/100 = **83.0%**

\# NA (Occupied & accessible unit, no contact) ⇨ 21
\# NE (Occupied, unaccessible unit, no contact) ⇨ 6

\# No contact (NA+ NE) = 27

RS (Refused to be screened) ⇨ 4

Total screened units:		
	Vacant/demolished	240
	Eligible	154
	Ineligible	2821
	No contact	27
	Refused screen	4
	Total	**3246** = \# units listed

Overall response rate:

\# Census housing units ⇨ 13032
\# Listed units ⇨ 12490
\# vacant/demolished/summer ⇨ 965

\# Listed occupied units (\# listed units - \# vacant/demolished) ⇨ 3246 - 240 = 11525

Coverage rate = $\dfrac{\text{\# listed occupied units}}{\text{\# census occupied units}}$ = $\dfrac{11525}{13032}$ = **88.4%**

\# screened units w/completed interviews ⇨451
\# CB (callbacks)[1] ⇨ 22
\# RE (eligible subjects who refused an interview) ⇨ 76

Screened units w/eligible subjects (comp + CB + RE) = 549

\# SO ⇨ Screen out, no females in household = 1146
\# SM ⇨ Screen out, no Mexican-American females in household = 7513
\# SA ⇨ Screen out, Mexican-American females not 50-74 years of age = 1832

Screened units w/ineligible subjects (SO + SM + SA) ⇨ 10491

Screen rate (SR) = $\dfrac{\text{\# screened eligible + \# units screened}}{\text{\# occupied units}}$ = $\dfrac{11040}{11525}$ = **95.8%**

Interview rate (IR) = $\dfrac{\text{\# completed}}{\text{\# screened eligible}}$ = $\dfrac{451}{549}$ = **82.1%**

Response Rate = SR x IR/100 = 95.8 x 82.2/100 = **78.7%**

\# NA (occupied & accessible unit, no contact) = 370
\# NE (Occupied, unaccessible unit, no contact) = 102

\# No contact (NA+ NE) ⇨ 472

RS (Refused to be screened) ⇨ 13

Total screened units: Vacant/demolished 965
Eligible 549
Ineligible 10491
No contact 472
Refused screen 13
Total   **12490** = \# units listed

Expected vs actual yield

$$\text{Yield} = \frac{\text{Actual comp} + \text{RE} + \text{CB}}{\text{Expected yield}}$$

$$\text{Rep 1} = \frac{274}{314.2} = \mathbf{87.2\%}$$

$$\text{Rep 2} = \frac{121}{128.93} = \mathbf{93.8\%}$$

$$\text{Rep 3} = \frac{154}{150.77} = \mathbf{102.1\%}$$

$$\text{Total yield} \quad \frac{549}{594} = \mathbf{92.4\%}$$

APPENDIX 4

Tables Containing Study Findings

Hypothesis1:
Selected predictors of mammographic screening behavior in predominantly no-Hispanic populations will generalize to Mexican-Americans. These include education, marital status and barriers to access, in addition to beliefs, knowledge and attitudes about breast cancer.

a. It increases with **Educational attainment**

GRADE	Ever had a Mammogram		
Frequency Row Pct	Yes	No	Total
1-5	120 74.07	42 25.93	162
6-8	89 80.91	21 19.09	110
9-11	58 86.57	9 13.43	67
12 or more	96 84.96	17 15.04	113
Total	363	89	452

GRADE	Had a Mammogram in past 2Yrs		
Frequency Row Pct	Yes	No	Total
1-5	80 49.69	81 50.31	161
6-8	55 50.00	55 50.00	110
9-11	44 65.67	23 34.33	67
12 or more	76 67.26	37 32.74	113
Total	255	196	451

Frequency missing = 1

STATISTICS FOR TABLE OF GRADE
BY Ever had a mammogram.

Statistic	DF	Value	Prob
Chi-Square	3	7.210	0.06
Likelihood Ratio Chi-Square	3	7.205	0.066
Mantel-Haenszel Chi-Square	1	6.481	0.011
Phi Coefficient		0.126	
Contingency Coefficient		0.125	
Cramer's V		0.126	

Sample Size = 452

STATISTICS FOR TABLE OF GRADE
BY Had a mammogram in past 2Yrs.

Statistic	DF	Value	Prob
Chi-Square	3	12.545	0.006
Likelihood Ratio Chi-Square	3	12.701	0.005
Mantel-Haenszel Chi-Square	1	9.989	0.002
Phi Coefficient		0.167	
Contingency Coefficient		0.165	
Cramer's V		0.167	

Sample Size = 451
Frequency missing = 1

The Mantel-Haenszel chi square statistics show an association between the highest grade achieved and ever had a mammogram. (p=0.011)
The likelihood of having mammogram in past 2yrs increases with educational attainment.(p=0.002)

b. It increases with **Income**

```
  INCOME      Ever had a mammogram           INCOME       Had a mammogram in past 2Yrs.

Frequency|                                 Frequency|
Row Pct  |    Yes|     No| Total           Row Pct  |    Yes|     No| Total
---------|-------|-------|------            ---------|-------|-------|------
$1-9999  |   107 |    42 | 149             $1-9999  |    66 |    83 | 149
         | 71.81 | 28.19 |                          | 44.30 | 55.70 |
---------|-------|-------|------            ---------|-------|-------|------
10K-24999|   155 |    34 | 189             10K-24999|   112 |    76 | 188
         | 82.01 | 17.99 |                          | 59.57 | 40.43 |
---------|-------|-------|------            ---------|-------|-------|------
25K-49999|    73 |    10 | 83              25K-49999|    56 |    27 | 83
         | 87.95 | 12.05 |                          | 67.47 | 32.53 |
---------|-------|-------|------            ---------|-------|-------|------
50K & over|   28 |     3 | 31              50K & over|   21 |    10 | 31
         | 90.32 |  9.68 |                          | 67.74 | 32.26 |
---------|-------|-------|------            ---------|-------|-------|------
Total    |   363 |    89 | 452             Total    |   255 |   196 | 451

                                          Frequency Missing = 1
```

STATISTICS FOR TABLE OF INCOME By
    Ever had a mammogram

Statistic	DF	Value	Prob
Chi-Square	3	12.181	0.007
Likelihood Ratio Chi-Square	3	12.322	0.006
Mantel-Haenszel Chi-Square	1	9.048	0.003
Phi Coefficient		0.164	
Contingency Coefficient		0.162	
Cramer's V		0.164	

Sample Size = 452

STATISTICS FOR TABLE OF INCOME BY
    Had a mammogram in past 2Yrs.

Statistic	DF	Value	Prob
Chi-Square	3	15.414	0.001
Likelihood Ratio Chi-Square	3	15.479	0.001
Mantel-Haenszel Chi-Square	1	10.113	0.001
Phi Coefficient		0.185	
Contingency Coefficient		0.182	
Cramer's V		0.185	

Effective Sample Size = 451
Frequency Missing = 1

The Mantel-Haenszel chi-square statistics indicate that ever having a mammogram and having a mammogram increases with income (p=0.003 and p=0.001).

c. It is higher with being **married**.

Marital status	Ever had a mammogram		
Frequency Row Pct	Yes	No	Total
Married	235 81.88	52 18.12	287
Widowed	63 74.12	22 25.88	85
Divorced	40 83.33	8 16.67	48
Separated	20 80.00	5 20.00	25
Never Married	5 71.43	2 28.57	7
Total	363	89	452

Marital status	Had a mammogram in past 2Yrs.		
Frequency Row Pct	Yes	No	Total
Married	166 58.04	120 41.96	286
Widowed	46 54.12	39 45.88	85
Divorced	24 50.00	24 50.00	48
Separated	14 56.00	11 44.00	25
Never Married	5 71.43	2 28.57	7
Total	255	196	451

Frequency Missing = 1

STATISTICS FOR TABLE OF Marital status
BY Ever had a mammogram

Statistic	DF	Value	Prob
Chi-Square	4	3.138	0.535
Likelihood Ratio Chi-Square	4	2.987	0.560
Mantel-Haenszel Chi-Square	1	0.374	0.541
Phi Coefficient		0.083	
Contingency Coefficient		0.083	
Cramer's V		0.083	

Sample Size = 452

STATISTICS FOR TABLE OF Marital status
By Had a mammogram in past 2Yrs.

Statistic	DF	Value	Prob
Chi-Square	4	1.936	0.748
Likelihood Ratio Chi-Square	4	1.957	0.744
Mantel-Haenszel Chi-Square	1	0.195	0.658
Phi Coefficient		0.066	
Contingency Coefficient		0.065	
Cramer's V		0.066	

Effective Sample Size = 451
Frequency Missing = 1

There is no association between being married and mammographic use.

d. It is higher with having **insurance** coverage.

```
┌─────────────────────────────────────────────────┬─────────────────────────────────────────────────┐
│ INSURANCE    EVER HAD A MAMMOGRAM                 │ INSUR       MAM_2YRS                              │
│                                                   │                                                   │
│ Frequency│                                        │ Frequency│                                        │
│ Row Pct  │       1│       2│ Total                │ Row Pct  │       1│       2│ Total                │
│                                                   │                                                   │
│    None  │    157 │     50 │  207                 │    None  │    100 │    107 │  207                 │
│          │  75.85 │  24.15 │                      │          │  48.31 │  51.69 │                      │
│                                                   │                                                   │
│ Medicare/│     35 │     13 │   48                 │ Medicare/│     25 │     23 │   48                 │
│ Medicaid │  72.92 │  27.08 │                      │  Medicaid│  52.08 │  47.92 │                      │
│                                                   │                                                   │
│  Private │    169 │     26 │  195                 │  Private │    130 │     65 │  195                 │
│          │  86.67 │  13.33 │                      │          │  66.67 │  33.33 │                      │
│                                                   │                                                   │
│ Total         361      89     450                 │ Total         255     195     450                 │
│                                                   │                                                   │
│ Frequency Missing = 2                             │ Frequency Missing = 2                             │
│                                                   │                                                   │
│                                                   │                                                   │
│ STATISTICS FOR TABLE OF Insurance                 │ STATISTICS FOR TABLE OF Insurance                 │
│       BY Ever had a mammogram                     │        BY Had a mammogram in past 2Yrs.           │
│                                                   │                                                   │
│ Statistic               DF   Value   Prob         │ Statistic               DF   Value   Prob         │
│                                                   │                                                   │
│ Chi-Square               2   9.218   0.010        │ Chi-Square               2   14.240  0.001        │
│ Likelihood Ratio Chi-Square 2 9.478  0.009        │ Likelihood Ratio Chi-Square 2 14.383 0.001        │
│ Mantel-Haenszel Chi-Square  1 7.323  0.007        │ Mantel-Haenszel Chi-Square  1 13.699 0.001        │
│ Phi Coefficient              0.143                │ Phi Coefficient              0.178                │
│ Contingency Coefficient      0.142                │ Contingency Coefficient      0.175                │
│ Cramer's V                   0.143                │ Cramer's V                   0.178                │
│                                                   │                                                   │
│ Effective Sample Size = 450                       │ Effective Sample Size = 450                       │
│ Frequency Missing = 2                             │ Frequency Missing = 2                             │
└─────────────────────────────────────────────────┴─────────────────────────────────────────────────┘
```

The Chi – square statistics shows that there is an association between having insurance coverage and ever had a mammogram or had a mammogram in the past 2yrs (p=.01 & p=0.001)
The percentage of women who are covered by private Insurance are more likely to have ever had a mammogram or to have had one in the past 2yrs.

e. It increases with having **usual source of care**

```
Usual                                        Usual
Source    Ever had a mammogram              Source    Had a mammogram in past 2Yrs.
of Care                                      of Care

Frequency|                                   Frequency|
Row Pct  |   Yes|    No| Total              Row Pct  |   Yes|    No| Total

   Yes   |   343|    69|  412                   Yes   |   245|   166|  411
         | 83.25| 16.75|                         | 59.61| 40.39|

    No   |    20|    20|   40                    No   |    10|    30|   40
         | 50.00| 50.00|                         | 25.00| 75.00|

Total        363     89    452              Total        255    196    451

                                            Frequency Missing = 1
```

```
STATISTICS FOR TABLE OF Usual Source of care    STATISTICS FOR TABLE OF Usual Source of care
          BY Ever had a mammogram                         BY Had a mammogram in past 2Yrs.

Statistic                 DF  Value  Prob      Statistic                 DF  Value  Prob

Chi-Square                 1  25.494  0.001    Chi-Square                 1  17.771  0.001
Likelihood Ratio Chi-Square 1 20.670 0.001     Likelihood Ratio Chi-Square 1 18.004 0.001
Continuity Adj. Chi-Square  1 23.435 0.001     Continuity Adj. Chi-Square  1 16.390 0.001
Mantel-Haenszel Chi-Square  1 25.438 0.001     Mantel-Haenszel Chi-Square  1 17.731 0.001
Fisher's Exact Test (Left)         1.000       Fisher's Exact Test (Left)         1.000
                    (Right)     5.58E-06                            (Right)     2.38E-05
                    (2-tail)    5.58E-06                            (2-Tail)    3.65E-05
Phi Coefficient              0.237             Phi Coefficient              0.199
Contingency Coefficient      0.231             Contingency Coefficient      0.195
Cramer's V                   0.237             Cramer's V                   0.199

Sample Size = 452                              Effective Sample Size = 451
                                               Frequency Missing = 1
```

The Chi – Square statistics show that there is an association of ever had a mammogram or had mammogram in past 2yrs with having a usual source of care. (p=0.001)

f. Increases with greater **knowledge of risks and symptoms of breast cancer**.

f1. Question asked: What is the age doctors recommend a woman to start having mammograms?
(Scale: 1. Age between 40 –50,
2. Age <40 or Age >50 or if at age when she starts or stops having period
3. Controversial –doctors do not agree)

```
AGE(Age)     MAM_EVER                          AGE(Age)     MAM_2YRS

Frequency|                                     Frequency|
Row Pct  |      1|      2| Total               Row Pct  |      1|      2| Total

       1 |   158 |    30 |  188                        1 |   114 |    74 |  188
         | 84.04 | 15.96 |                             | 60.64 | 39.36 |

       2 |   193 |    33 |  226                        2 |   131 |    94 |  225
         | 85.40 | 14.60 |                             | 58.22 | 41.78 |

       3 |     7 |     3 |   10                        3 |     6 |     4 |   10
         | 70.00 | 30.00 |                             | 60.00 | 40.00 |

Total        358      66    424               Total        251     172    423

Frequency Missing = 28                        Frequency Missing = 29


STATISTICS FOR TABLE OF AGE BY MAM_EVER        STATISTICS FOR TABLE OF AGE BY MAM_2YRS

Statistic                DF   Value   Prob     Statistic                DF   Value   Prob
_____        _____

Chi-Square                2   1.767   0.413    Chi-Square                2   0.250   0.883
Likelihood Ratio Chi-Square 2 1.496   0.473    Likelihood Ratio Chi-Square 2 0.250   0.883
Mantel-Haenszel Chi-Square  1 0.031   0.861    Mantel-Haenszel Chi-Square  1 0.190   0.663
Phi Coefficient               0.065            Phi Coefficient               0.024
Contingency Coefficient       0.064            Contingency Coefficient       0.024
Cramer's V                    0.065            Cramer's V                    0.024

Effective Sample Size = 424                    Effective Sample Size = 423
Frequency Missing = 28                         Frequency Missing = 29
```

The Mantel-Haenszel chi – square statistics show that there is no significant association between cancer knowledge/ awareness to ever had a mammogram or had a mammogram in the past 2yrs.

f2. Question asked: How often do you think a woman of your age should have a mammogram?

```
AGEG2      MAM_EVER                          AGEG2      MAM_2YRS

Frequency|                                   Frequency|
Row Pct  |      1|      2| Total              Row Pct  |      1|      2| Total

yearly   |    290|     57|   347              yearly   |    209|    137|   346
         |  83.57|  16.43|                             |  60.40|  39.60|

every 2  |     36|      6|    42              every 2  |     18|     24|    42
  years  |  85.71|  14.29|                      years  |  42.86|  57.14|

other    |     26|     11|    37              other    |     22|     15|    37
         |  70.27|  29.73|                             |  59.46|  40.54|

Total         352      74     426            Total         249     176     425

Frequency Missing = 26                       Frequency Missing = 27


STATISTICS FOR TABLE OF AGEG2 BY MAM_EVER     STATISTICS FOR TABLE OF AGEG2 BY MAM_2YRS

Statistic               DF   Value    Prob    Statistic               DF   Value    Prob

Chi-Square               2   4.431   0.109    Chi-Square               2   4.766   0.092
Likelihood Ratio Chi-Square 2 3.909  0.142    Likelihood Ratio Chi-Square 2 4.684  0.096
Mantel-Haenszel Chi-Square 1 2.704   0.100    Mantel-Haenszel Chi-Square 1 0.923   0.337
Phi Coefficient              0.102            Phi Coefficient              0.106
Contingency Coefficient      0.101            Contingency Coefficient      0.105
Cramer's V                   0.102            Cramer's V                   0.106

Effective Sample Size = 426                   Effective Sample Size = 425
Frequency Missing = 26                        Frequency Missing = 27
```

The Mantel-Haenszel chi – square statistics show that there is no significant association between cancer knowledge/ awareness to ever had a mammogram or had a mammogram in the past 2yrs.

g. Increases with positive **attitudes about preventive care**.

1. Question asked: When was the last time you visited a doctor for routine check-up?

```
Time            MAM_EVER                    Time            MAM_2YRS

Frequency|                                  Frequency|
Row Pct  |     1 |      2 | Total           Row Pct  |     1 |      2 | Total
---------+-------+--------+                 ---------+-------+--------+
< 1year  |   162 |     21 |  183              1      |   128 |     55 |  183
         | 88.52 |  11.48 |                          | 69.95 |  30.05 |
---------+-------+--------+                 ---------+-------+--------+
<2 year  |    41 |      9 |   50              2      |    31 |     19 |   50
         | 82.00 |  18.00 |                          | 62.00 |  38.00 |
---------+-------+--------+                 ---------+-------+--------+
2 Or more|    36 |     19 |   55              3      |    10 |     45 |   55
  years  | 65.45 |  34.55 |                          | 18.18 |  81.82 |
---------+-------+--------+                 ---------+-------+--------+
Total        239      49     288           Total        169     119     288

Frequency Missing = 164                    Frequency Missing = 164


STATISTICS FOR TABLE OF Time BY MAM_EVER   STATISTICS FOR TABLE OF Time BY MAM_2YRS

Statistic                   DF  Value  Prob  Statistic                   DF  Value  Prob
---------------------------------------------  ---------------------------------------------

Chi-Square                   2 15.983 0.001  Chi-Square                   2 47.009 0.001
Likelihood Ratio Chi-Square  2 14.253 0.001  Likelihood Ratio Chi-Square  2 48.221 0.001
Mantel-Haenszel Chi-Square   1 15.244 0.001  Mantel-Haenszel Chi-Square   1 41.743 0.001
Phi Coefficient                    0.236     Phi Coefficient                    0.404
Contingency Coefficient            0.229     Contingency Coefficient            0.375
Cramer's V                         0.236     Cramer's V                         0.404

Effective Sample Size = 288                  Effective Sample Size = 288
Frequency Missing = 164                      Frequency Missing = 164
WARNING: 36% of the data are missing.        WARNING: 36% of the data are missing.
```

The Mantel-Haenszel chi-square statistics show there may be an association with ever had a mammogram or had mammogram in the past 2yrs and a positive attitudes about preventive care. (p=0.001 and p= 0.001). (36% of the data are missing)

2. Question asked :Do you examine breasts for lumps?

```
E22(E22)    MAM_EVER                        E22(E22)    MAM_2YRS

Frequency|                                  Frequency|
Row Pct  |      1|      2| Total            Row Pct  |      1|      2| Total
---------+-------+-------+                  ---------+-------+-------+
   Yes   |   295 |    67 |  362                Yes   |   207 |   154 |  361
         | 81.49 | 18.51 |                           | 57.34 | 42.66 |
---------+-------+-------+                  ---------+-------+-------+
   No    |    68 |    22 |   90                No    |    48 |    42 |   90
         | 75.56 | 24.44 |                           | 53.33 | 46.67 |
---------+-------+-------+                  ---------+-------+-------+
Total        363      89     452            Total        255     196     451

                                           Frequency Missing = 1


STATISTICS FOR TABLE OF E22 BY MAM_EVER     STATISTICS FOR TABLE OF E22 BY MAM_2YRS

Statistic               DF   Value   Prob   Statistic               DF   Value   Prob
-----------------------------------------   -----------------------------------------

Chi-Square               1   1.606  0.205   Chi-Square               1   0.471  0.493
Likelihood Ratio Chi-Square 1 1.542 0.214   Likelihood Ratio Chi-Square 1 0.469 0.493
Continuity Adj. Chi-Square 1  1.253 0.263   Continuity Adj. Chi-Square 1  0.322 0.570
Mantel-Haenszel Chi-Square 1  1.603 0.206   Mantel-Haenszel Chi-Square 1  0.470 0.493
Phi Coefficient              0.060          Phi Coefficient              0.032
Contingency Coefficient      0.060          Contingency Coefficient      0.032
Cramer's V                   0.060          Cramer's V                   0.032

Sample Size = 452                           Effective Sample Size = 451
                                            Frequency Missing = 1
```

The chi – square statistic shows that there is no association with ever had a mammogram
or had a mammogram in the past 2yrs and the positive attitudes about preventive care.
(examine breast for lumps) (p=0.205 & p=0.493).

i. Higher for women with a **perceived susceptibility to breast cancer**.
1.Question asked: How much do you worry about getting breast cancer?

```
G6(G6)      MAM_EVER                    G6(G6)      MAM_2YRS

Frequency|                             Frequency|
Row Pct  |      1|      2|  Total       Row Pct  |      1|      2|  Total

   a lot |    76 |     4 |    80           a lot |    56 |    24 |    80
         | 95.00 |  5.00 |                        | 70.00 | 30.00 |

    some |   123 |    25 |   148            some |    82 |    65 |   147
         | 83.11 | 16.89 |                        | 55.78 | 44.22 |

  not at |   164 |    60 |   224          not at |   117 |   107 |   224
     all | 73.21 | 26.79 |                   all | 52.23 | 47.77 |

   Total     363      89     452          Total     255     196     451

                                          Frequency Missing = 1

STATISTICS FOR TABLE OF G6 BY MAM_EVER   STATISTICS FOR TABLE OF G6 BY MAM_2YRS

Statistic               DF  Value  Prob   Statistic               DF  Value  Prob
_____

Chi-Square               2 18.782 0.001   Chi-Square               2  7.624 0.022
Likelihood Ratio Chi-Square 2 21.919 0.001 Likelihood Ratio Chi-Square 2 7.842 0.020
Mantel-Haenszel Chi-Square 1 18.683 0.001 Mantel-Haenszel Chi-Square 1 6.562 0.010
Phi Coefficient             0.204          Phi Coefficient             0.130
Contingency Coefficient     0.200          Contingency Coefficient     0.129
Cramer's V                  0.204          Cramer's V                  0.130

Sample Size = 452                         Effective Sample Size = 451
                                          Frequency Missing = 1
```

The Mantel-Haenszel chi- square statistics show there is an association between ever had a mammogram or had a mammogram in the past 2yrs to perceived susceptibility to breast cancer. (p=0.001 & p= 0.010).

2. Question asked: Do you worry about any of your female relatives getting breast cancer?

```
G7(G7)      MAM_EVER                          G7(G7)      MAM_2YRS

Frequency|                                    Frequency|
Row Pct  |      1|      2| Total              Row Pct  |      1|      2| Total
---------+-------+-------+                    ---------+-------+-------+
    Yes  |   218 |    34 |  252                   Yes  |   155 |    96 |  251
         | 86.51 | 13.49 |                         | 61.75 | 38.25 |
---------+-------+-------+                    ---------+-------+-------+
    No   |   145 |    54 |  199                   No   |   100 |    99 |  199
         | 72.86 | 27.14 |                         | 50.25 | 49.75 |
---------+-------+-------+                    ---------+-------+-------+
Total        363      88    451              Total        255     195    450

Frequency Missing = 1                        Frequency Missing = 2


STATISTICS FOR TABLE OF G7 BY MAM_EVER       STATISTICS FOR TABLE OF G7 BY MAM_2YRS

Statistic                 DF   Value   Prob   Statistic                 DF   Value   Prob
-----------------------------------------     -----------------------------------------

Chi-Square                 1  13.180  0.001   Chi-Square                 1   5.980  0.014
Likelihood Ratio Chi-Square 1 13.124  0.001   Likelihood Ratio Chi-Square 1  5.980  0.014
Continuity Adj. Chi-Square  1 12.325  0.001   Continuity Adj. Chi-Square  1  5.521  0.019
Mantel-Haenszel Chi-Square  1 13.150  0.001   Mantel-Haenszel Chi-Square  1  5.967  0.015
Phi Coefficient               0.171           Phi Coefficient               0.115
Contingency Coefficient       0.169           Contingency Coefficient       0.115
Cramer's V                    0.171           Cramer's V                    0.115

Effective Sample Size = 451                  Effective Sample Size = 450
Frequency Missing = 1                        Frequency Missing = 2
```

The chi- square statistics show there is an association between ever had a mammogram or had a mammogram in the past 2yrs to perceived susceptibility to breast cancer. ($p=0.001$ & $p= 0.014$).

3. Question asked: Are there any female members of your immediate family who have or
   had breast cancer? (By immediate family, I mean mother, sister, aunt,
   daughter or grandmother)

```
D4(D4)      MAM_EVER                          D4(D4)      MAM_2YRS

Frequency|                                    Frequency|
Row Pct  |     1  |     2 | Total             Row Pct  |     1  |     2 | Total

   Yes   |    82  |    12 |   94                 Yes   |    63  |    31 |   94
         | 87.23  | 12.77 |                           | 67.02  | 32.98 |

   No    |   280  |    77 |  357                 No    |   191  |   165 |  356
         | 78.43  | 21.57 |                           | 53.65  | 46.35 |

Total         362      89    451              Total         254     196    450

Frequency Missing = 1                         Frequency Missing = 2


STATISTICS FOR TABLE OF D4 BY MAM_EVER        STATISTICS FOR TABLE OF D4 BY MAM_2YRS

Statistic               DF   Value   Prob     Statistic               DF   Value   Prob


Chi-Square               1   3.640   0.056    Chi-Square               1   5.407   0.020
Likelihood Ratio Chi-Square 1 3.941  0.047    Likelihood Ratio Chi-Square 1 5.519  0.019
Continuity Adj. Chi-Square 1  3.105  0.078    Continuity Adj. Chi-Square 1  4.877  0.027
Mantel-Haenszel Chi-Square 1  3.632  0.057    Mantel-Haenszel Chi-Square 1  5.395  0.020
Phi Coefficient              0.090            Phi Coefficient              0.110
Contingency Coefficient      0.089            Contingency Coefficient      0.109
Cramer's V                   0.090            Cramer's V                   0.110

Effective Sample Size = 451                   Effective Sample Size = 450
Frequency Missing = 1                         Frequency Missing = 2
```

The ·   chi-square statistics show there is an association with ever had a
mammogram or had mammogram in the past 2yrs and family history of breast cancer.
(p=0.057 and p= 0.020).

4. Question asked: Other than female members of your immediate family, are there any other relatives or close friends who had breast cancer?

```
D6(D6)      MAM_EVER                        D6(D6)      MAM_2YRS

Frequency|                                  Frequency|
Row Pct  |     1|     2| Total              Row Pct  |     1|     2| Total

     Yes |   131|    23|  154                     1  |    90|    63|  153
         | 85.06| 14.94|                          | 58.82| 41.18|

      No |   232|    66|  298                     2  |   165|   133|  298
         | 77.85| 22.15|                          | 55.37| 44.63|

   Total     363     89   452                  Total     255    196   451

                                             Frequency Missing = 1

STATISTICS FOR TABLE OF D6 BY MAM_EVER

Statistic                 DF    Value    Prob     STATISTICS FOR TABLE OF D6 BY MAM_2YRS


Chi-Square                 1    3.340    0.068     Statistic                 DF    Value    Prob
Likelihood Ratio Chi-Square 1   3.461    0.063
Continuity Adj. Chi-Square  1   2.900    0.089     Chi-Square                 1    0.491    0.484
Mantel-Haenszel Chi-Square  1   3.333    0.068     Likelihood Ratio Chi-Square 1   0.492    0.483
Phi Coefficient                 0.086              Continuity Adj. Chi-Square  1   0.360    0.548
Contingency Coefficient         0.086              Mantel-Haenszel Chi-Square  1   0.490    0.484
Cramer's V                      0.086              Phi Coefficient                 0.033
                                                   Contingency Coefficient         0.033
Sample Size = 452                                  Cramer's V                      0.033

                                                   Effective Sample Size = 451
                                                   Frequency Missing = 1
```

The   chi-square statistics show there is no association with ever had a mammogram or had mammogram in the past 2yrs and family history of breast cancer. (p=0.068 and p= 0.484).

j. Decreases with **age.**

```
AGEGROUP      MAM_EVER                        AGEGROUP      MAM_2YRS

Frequency|                                   Frequency|
Row Pct  |      1 |      2 | Total           Row Pct  |      1 |      2 | Total

  50-64  |   256  |    61  |  317              50-64  |   185  |   131  |  316
         | 80.76  | 19.24  |                          | 58.54  | 41.46  |

  65 -69 |    64  |    15  |   79              65 -69 |    42  |    37  |   79
         | 81.01  | 18.99  |                          | 53.16  | 46.84  |

  70-74  |    43  |    13  |   56              70-74  |    28  |    28  |   56
         | 76.79  | 23.21  |                          | 50.00  | 50.00  |

Total        363       89     452           Total        255      196     451

                                            Frequency Missing = 1

STATISTICS FOR TABLE OF AGEGROUP BY MAM_EVER   STATISTICS FOR TABLE OF AGEGROUP BY MAM_2YRS

Statistic                 DF   Value   Prob  Statistic                 DF   Value   Prob
_____  _____


Chi-Square                 2   0.505   0.777  Chi-Square                 2   1.858   0.395
Likelihood Ratio Chi-Square 2   0.487   0.784  Likelihood Ratio Chi-Square 2   1.849   0.397
Mantel-Haenszel Chi-Square  1   0.215   0.643  Mantel-Haenszel Chi-Square  1   1.835   0.176
Phi Coefficient                 0.033         Phi Coefficient                 0.064
Contingency Coefficient         0.033         Contingency Coefficient         0.064
Cramer's V                      0.033         Cramer's V                      0.064

Sample Size = 452                           Effective Sample Size = 451
                                            Frequency Missing = 1
```

The Mantel-Haenszel chi- square statistics show that there is no significant association between ever had a mammogram or had a mammogram in past 2yrs and age. (p=0.643 & p=0.176).

k. Increases with positive **beliefs about efficacy of screening** (question asked: What are the person's chances of surviving breast cancer if it is found and treated early?)

```
Efficacy     MAM_EVER                      Efficacy     MAM_2YRS

Frequency|                                 Frequency|
Row Pct  |    1  |    2  | Total           Row Pct  |    1  |    2  | Total

  good   |  293  |   66  |  359              Good   |  205  |  153  |  358
         | 81.62 | 18.38 |                         | 57.26 | 42.74 |

  Fair   |   63  |   14  |   77              Fair   |   44  |   33  |   77
         | 81.82 | 18.18 |                         | 57.14 | 42.86 |

  poor   |    5  |    4  |    9              Poor   |    4  |    5  |    9
         | 55.56 | 44.44 |                         | 44.44 | 55.56 |

Total       361      84     445           Total       253     191     444

Frequency Missing = 7                     Frequency Missing = 8

STATISTICS FOR TABLE OF EFFICACY BY MAM_EVER   STATISTICS FOR TABLE OF EFFICACY BY MAM_2YRS

Statistic                DF  Value  Prob   Statistic                DF  Value  Prob
_____   _____

Chi-Square                2  3.923  0.141  Chi-Square                2  0.589  0.745
Likelihood Ratio Chi-Square 2  3.146  0.207 Likelihood Ratio Chi-Square 2  0.582  0.748
Mantel-Haenszel Chi-Square  1  1.163  0.281 Mantel-Haenszel Chi-Square  1  0.200  0.655
Phi Coefficient                0.094       Phi Coefficient                0.036
Contingency Coefficient        0.093       Contingency Coefficient        0.036
Cramer's V                     0.094       Cramer's V                     0.036

Effective Sample Size = 445                Effective Sample Size = 444
Frequency Missing = 7                      Frequency Missing = 8
```

The Mantel-Haenszel chi – square statistics show that there is no association with positive beliefs and ever had a mammogram or had a mammogram in the past two years. (p=0.281 & p=0.655).

Hypothesis2. Women with low levels of acculturation are less likely to have had a mammogram than with high levels of acculturation.

   a. Mammographic use increases with higher proficiency in English

      (Scale: 1→ (Low) --- 4→ (High))

```
ENGPRO      MAM_EVER                          ENGPRO      MAM_2YRS

Frequency                                     Frequency
Row Pct       1        2    Total             Row Pct       1        2    Total

     1       52       25       77                  1       34       43       77
          67.53    32.47                                44.16    55.84

     2       73       13       86                  2       43       42       85
          84.88    15.12                                50.59    49.41

     3      108       18      126                  3       77       49      126
          85.71    14.29                                61.11    38.89

     4      130       33      163                  4      101       62      163
          79.75    20.25                                61.96    38.04

Total       363       89      452             Total      255      196      451

                                              Frequency Missing = 1


STATISTICS FOR TABLE OF ENGPRO BY MAM_EVER    STATISTICS FOR TABLE OF ENGPRO BY MAM_2YRS

Statistic              DF   Value   Prob      Statistic              DF   Value   Prob


Chi-Square              3  11.447  0.010      Chi-Square              3   9.054  0.029
Likelihood Ratio Chi-Square 3 10.747 0.013    Likelihood Ratio Chi-Square 3 9.022 0.029
Mantel-Haenszel Chi-Square  1  2.554  0.110   Mantel-Haenszel Chi-Square  1  8.127  0.004
Phi Coefficient             0.159            Phi Coefficient             0.142
Contingency Coefficient     0.157            Contingency Coefficient     0.140
Cramer's V                  0.159            Cramer's V                  0.142

Sample Size = 452                            Effective Sample Size = 451
                                             Frequency Missing = 1
```

The Mantel-Haenszel chi-square statistics show there is no association with ever had a mammogram and proficiency in English (p=0.110) But there is an association with had a mammogram in the past 2yrs and proficiency in English. (p=0.004).

b. Mammographic use increases with higher usage of English

```
USAGE       MAM_EVER                              USAGE       MAM_2YRS

Frequency|                                        Frequency|
Row Pct  |       1|       2|  Total               Row Pct  |       1|       2|  Total
─────────┼────────┼────────┤                      ─────────┼────────┼────────┤
       1 |    102 |     33 |   135                       1 |     68 |     66 |   134
         |  75.56 |  24.44 |                             |  50.75 |  49.25 |
─────────┼────────┼────────┤                      ─────────┼────────┼────────┤
       2 |     58 |     11 |    69                       2 |     36 |     33 |    69
         |  84.06 |  15.94 |                             |  52.17 |  47.83 |
─────────┼────────┼────────┤                      ─────────┼────────┼────────┤
       3 |    138 |     26 |   164                       3 |     99 |     65 |   164
         |  84.15 |  15.85 |                             |  60.37 |  39.63 |
─────────┼────────┼────────┤                      ─────────┼────────┼────────┤
       4 |     60 |     14 |    74                       4 |     48 |     26 |    74
         |  81.08 |  18.92 |                             |  64.86 |  35.14 |
─────────┴────────┴────────┘                      ─────────┴────────┴────────┘
Total        358       84      442                Total        251      190      441

Frequency Missing = 10                            Frequency Missing = 11
```

STATISTICS FOR TABLE OF USAGE BY MAM_EVER

Statistic	DF	Value	Prob
Chi-Square	3	4.074	0.254
Likelihood Ratio Chi-Square	3	3.977	0.264
Mantel-Haenszel Chi-Square	1	1.975	0.160
Phi Coefficient		0.096	
Contingency Coefficient		0.096	
Cramer's V		0.096	

Effective Sample Size = 442
Frequency Missing = 10

STATISTICS FOR TABLE OF USAGE BY MAM_2YRS

Statistic	DF	Value	Prob
Chi-Square	3	5.416	0.144
Likelihood Ratio Chi-Square	3	5.436	0.143
Mantel-Haenszel Chi-Square	1	5.142	0.023
Phi Coefficient		0.111	
Contingency Coefficient		0.110	
Cramer's V		0.111	

Effective Sample Size = 441
Frequency Missing = 11

The Mantel-Haenszel chi-square statistics show there is no association with ever had a mammogram and usage of English (p=0.160) But there is an association with had a mammogram in the past 2yrs and usage of English. (p=0.023).

c. Mammographic use increases with higher value placed on Mexican culture.

```
MEXCUL      MAM_EVER                      MEXCUL      MAM_2YRS

Frequency|                               Frequency|
Row Pct  |      1|      2| Total         Row Pct  |      1|      2| Total
---------+------+-------+-------         ---------+------+-------+-------
       1 |   146 |    39 |  185                 1 |    98 |    86 |  184
         | 78.92 | 21.08 |                       | 53.26 | 46.74 |
---------+------+-------+-------         ---------+------+-------+-------
       2 |   113 |    20 |  133                 2 |    84 |    49 |  133
         | 84.96 | 15.04 |                       | 63.16 | 36.84 |
---------+------+-------+-------         ---------+------+-------+-------
       3 |    53 |    13 |   66                 3 |    36 |    30 |   66
         | 80.30 | 19.70 |                       | 54.55 | 45.45 |
---------+------+-------+-------         ---------+------+-------+-------
       4 |    27 |     9 |   36                 4 |    23 |    13 |   36
         | 75.00 | 25.00 |                       | 63.89 | 36.11 |
---------+------+-------+-------         ---------+------+-------+-------
Total        339      81    420         Total        241     178    419

Frequency Missing = 32                  Frequency Missing = 33
```

STATISTICS FOR TABLE OF MEXCUL BY MAM_EVER

Statistic	DF	Value	Prob
Chi-Square	3	2.687	0.442
Likelihood Ratio Chi-Square	3	2.728	0.436
Mantel-Haenszel Chi-Square	1	0.019	0.891
Phi Coefficient		0.080	
Contingency Coefficient		0.080	
Cramer's V		0.080	

Effective Sample Size = 420
Frequency Missing = 32

STATISTICS FOR TABLE OF MEXCUL BY MAM_2YRS

Statistic	DF	Value	Prob
Chi-Square	3	3.933	0.269
Likelihood Ratio Chi-Square	3	3.955	0.266
Mantel-Haenszel Chi-Square	1	1.148	0.284
Phi Coefficient		0.097	
Contingency Coefficient		0.096	
Cramer's V		0.097	

Effective Sample Size = 419
Frequency Missing = 33

The Mantel-Haenszel chi-square statistics show there is no association with ever had a mammogram or had a mammogram in the past 2yrs and value placed on Mexican culture. (p=0.891 and p=0.284).

d. Mammographic use increases with positive attitudes toward family structure.

```
FAMSEX      MAM_EVER                        FAMSEX      MAM_2YRS

Frequency|                                  Frequency|
Row Pct  |       1|       2| Total          Row Pct  |       1|       2| Total
         +--------+--------+                         +--------+--------+
       1 |    131 |     41 |  172                  1 |     93 |     78 |  171
         |  76.16 |  23.84 |                         |  54.39 |  45.61 |
         +--------+--------+                         +--------+--------+
       2 |    120 |     26 |  146                  2 |     79 |     67 |  146
         |  82.19 |  17.81 |                         |  54.11 |  45.89 |
         +--------+--------+                         +--------+--------+
       3 |     99 |     19 |  118                  3 |     75 |     43 |  118
         |  83.90 |  16.10 |                         |  63.56 |  36.44 |
         +--------+--------+                         +--------+--------+
       4 |     13 |      3 |   16                  4 |      8 |      8 |   16
         |  81.25 |  18.75 |                         |  50.00 |  50.00 |
         +--------+--------+                         +--------+--------+
Total         363       89    452          Total         255      196    451

                                           Frequency Missing = 1
```

STATISTICS FOR TABLE OF FAMSEX BY MAM_EVER

Statistic	DF	Value	Prob
Chi-Square	3	3.167	0.367
Likelihood Ratio Chi-Square	3	3.136	0.371
Mantel-Haenszel Chi-Square	1	2.434	0.119
Phi Coefficient		0.084	
Contingency Coefficient		0.083	
Cramer's V		0.084	

Sample Size = 452

STATISTICS FOR TABLE OF FAMSEX BY MAM_2YRS

Statistic	DF	Value	Prob
Chi-Square	3	3.318	0.345
Likelihood Ratio Chi-Square	3	3.352	0.340
Mantel-Haenszel Chi-Square	1	1.125	0.289
Phi Coefficient		0.086	
Contingency Coefficient		0.085	
Cramer's V		0.086	

Effective Sample Size = 451
Frequency Missing = 1

The Mantel-Haenszel chi-square statistics show there is no association with ever had a mammogram or had a mammogram in the past 2yrs and attitudes toward traditional family structure. (p=0.119 and p=0.289).

e. Mammographic use increases with childhood interaction with members of mainstream society.

```
CHILDINT     MAM_EVER                      CHILDINT     MAM_2YRS

Frequency|                                 Frequency|
Row Pct  |       1|       2| Total         Row Pct  |       1|       2| Total
---------+--------+--------+               ---------+--------+--------+
        1|     193|      54|   247                 1|     131|     115|   246
         |   78.14|   21.86|                        |   53.25|   46.75|
---------+--------+--------+               ---------+--------+--------+
        2|      61|      12|    73                 2|      42|      31|    73
         |   83.56|   16.44|                        |   57.53|   42.47|
---------+--------+--------+               ---------+--------+--------+
        3|      64|      12|    76                 3|      50|      26|    76
         |   84.21|   15.79|                        |   65.79|   34.21|
---------+--------+--------+               ---------+--------+--------+
        4|      36|       8|    44                 4|      24|      20|    44
         |   81.82|   18.18|                        |   54.55|   45.45|
---------+--------+--------+               ---------+--------+--------+
Total         354       86     440         Total         247      192     439

Frequency Missing = 12                     Frequency Missing = 13
```

STATISTICS FOR TABLE OF CHILDINT BY MAM_EVER

Statistic	DF	Value	Prob
Chi-Square	3	2.025	0.567
Likelihood Ratio Chi-Square	3	2.059	0.560
Mantel-Haenszel Chi-Square	1	1.255	0.263
Phi Coefficient		0.068	
Contingency Coefficient		0.068	
Cramer's V		0.068	

Effective Sample Size = 440
Frequency Missing = 12

STATISTICS FOR TABLE OF CHILDINT BY MAM_2YRS

Statistic	DF	Value	Prob
Chi-Square	3	3.810	0.283
Likelihood Ratio Chi-Square	3	3.871	0.276
Mantel-Haenszel Chi-Square	1	1.450	0.229
Phi Coefficient		0.093	
Contingency Coefficient		0.093	
Cramer's V		0.093	

Effective Sample Size = 439
Frequency Missing = 13

The Mantel-Haenszel chi-square statistics show there is no association with ever had a mammogram or had a mammogram in the past 2yrs and childhood interaction with members of mainstream society. (p=0.263 and p=0.229).

f. Mammographic use increases with adult interaction with members of mainstream society.

```
ADULTINT     MAM_EVER                          ADULTINT     MAM_2YRS

Frequency|                                     Frequency|
Row Pct  |     1|     2| Total                 Row Pct  |     1|     2| Total

      1  |   73 |   35 |  108                        1  |   48 |   59 |  107
         |67.59 |32.41 |                             |44.86 |55.14 |

      2  |   61 |   13 |   74                        2  |   45 |   29 |   74
         |82.43 |17.57 |                             |60.81 |39.19 |

      3  |  118 |   22 |  140                        3  |   88 |   52 |  140
         |84.29 |15.71 |                             |62.86 |37.14 |

      4  |   99 |   16 |  115                        4  |   65 |   50 |  115
         |86.09 |13.91 |                             |56.52 |43.48 |

Total        351     86    437                 Total        246    190    436

Frequency Missing = 15                         Frequency Missing = 16


STATISTICS FOR TABLE OF ADULTINT BY MAM_EVER   STATISTICS FOR TABLE OF ADULTINT BY MAM_2YRS

Statistic                DF   Value   Prob     Statistic                DF   Value   Prob
_____  _____

Chi-Square                3  15.089  0.002     Chi-Square                3   8.756  0.033
Likelihood Ratio Chi-Square  3  14.046  0.003  Likelihood Ratio Chi-Square  3   8.731  0.033
Mantel-Haenszel Chi-Square   1  12.147  0.001  Mantel-Haenszel Chi-Square   1   3.456  0.063
Phi Coefficient              0.186            Phi Coefficient              0.142
Contingency Coefficient      0.183            Contingency Coefficient      0.140
Cramer's V                   0.186            Cramer's V                   0.142

Effective Sample Size = 437                    Effective Sample Size = 436
Frequency Missing = 15                         Frequency Missing = 16
```

The Mantel-Haenszel chi-square statistics show there is an association with ever had a mammogram or had a mammogram in the past 2yrs and adult interaction with members of mainstream society. ($p=0.001$ and $p=0.063$).

Increases with high level of **acculturation.** (Hazuda's scale of composite score of acculturation)

```
Composite      Ever had a mammogram              Composite      Had a mammogram in past 2yrs.
score                                            score

Frequency|                                       Frequency|
Row Pct  |     1|     2| Total                    Row Pct  |     1|     2| Total

 (Low) 1 |   43 |   26 |   69                         1    |   28 |   40 |   68
         |62.32 |37.68 |                                  |41.18 |58.82 |

       2 |   96 |   18 |  114                         2    |   67 |   47 |  114
         |84.21 |15.79 |                                  |58.77 |41.23 |

       3 |  163 |   32 |  195                         3    |  114 |   81 |  195
         |83.59 |16.41 |                                  |58.46 |41.54 |

(High) 4 |   60 |   12 |   72                         4    |   45 |   27 |   72
         |83.33 |16.67 |                                  |62.50 |37.50 |

Total        362     88    450                   Total        254    195    449

Frequency Missing = 2                            Frequency Missing = 3

STATISTICS FOR TABLE OF COMPOSITE SCORE          STATISTICS FOR TABLE OF COMPOSITE SCORE
       BY EVER HAD A MAMMOGRAM                          BY HAD A MAMMOGRAM IN PAST 2YRS.

Statistic                  DF   Value   Prob     Statistic                  DF   Value   Prob

Chi-Square                 3   17.046   0.001    Chi-Square                 3    8.098   0.044
Likelihood Ratio Chi-Square 3  14.913   0.002    Likelihood Ratio Chi-Square 3   8.040   0.045
Mantel-Haenszel Chi-Square 1    8.454   0.004    Mantel-Haenszel Chi-Square 1    5.399   0.020
Phi Coefficient                 0.195            Phi Coefficient                 0.134
Contingency Coefficient         0.191            Contingency Coefficient         0.133
Cramer's V                      0.195            Cramer's V                      0.134

Effective Sample Size = 450                      Effective Sample Size = 449
Frequency Missing = 2                            Frequency Missing = 3
```

The Mantel-Haenszwl chi- Square statistics show that there is an association between level of acculturation and ever had a mammogram and had mammogram in past 2yrs. (p=0.004 & p=0.020).

Hypothesis 3. Strong social support related to the family is associated with increased likelihood of ever having mammogram and, among those who had a mammogram, of having had a mammogram in the last 2 years.

a. Increases with **strength of family networks** (number and frequency of contacts)

1. Question asked : How many people live in the household?

No. of people	MAM_EVER			No. of People	MAM_2YRS		
Frequency Row Pct	1	2	Total	Frequency Row Pct	1	2	Total
1 or 2	195 84.05	37 15.95	232	1 or 2	143 61.64	89 38.36	232
3 or 4	121 82.88	25 17.12	146	3 or 4	82 56.55	63 43.45	145
5 or more	47 63.51	27 36.49	74	5 or more	30 40.54	44 59.46	74
Total	363	89	452	Total	255	196	451

Frequency Missing = 1

STATISTICS FOR TABLE OF PEOPLE BY MAM_EVER

Statistic	DF	Value	Prob
Chi-Square	2	15.865	0.001
Likelihood Ratio Chi-Square	2	14.046	0.001
Mantel-Haenszel Chi-Square	1	11.214	0.001
Phi Coefficient		0.187	
Contingency Coefficient		0.184	
Cramer's V		0.187	

Sample Size = 452

STATISTICS FOR TABLE OF PEOPLE BY MAM_2YRS

Statistic	DF	Value	Prob
Chi-Square	2	10.163	0.006
Likelihood Ratio Chi-Square	2	10.106	0.006
Mantel-Haenszel Chi-Square	1	9.073	0.003
Phi Coefficient		0.150	
Contingency Coefficient		0.148	
Cramer's V		0.150	

Effective Sample Size = 451
Frequency Missing = 1

The Mantel-Haenszel chi-square statistics shows that there is an association between ever had a mammogram or had mammogram to no. of people staying in the household. (p=0.001 & p=0.003) . The mammographic use decreases with no. of people staying in the household.

2. Question asked: How many living sons do you have?

```
SON         MAM_EVER                          SON         MAM_2YRS

Frequency|                                    Frequency|
Row Pct  |      1|      2| Total              Row Pct  |      1|      2| Total

   None  |    44 |     9 |   53                  None  |    32 |    21 |   53
         | 83.02 | 16.98 |                            | 60.38 | 39.62 |

   1 or 2|   181 |    48 |  229                  1 or 2|   131 |    98 |  229
         | 79.04 | 20.96 |                            | 57.21 | 42.79 |

   3 or 4|    97 |    18 |  115                  3 or 4|    67 |    48 |  115
         | 84.35 | 15.65 |                            | 58.26 | 41.74 |

5 or more|    41 |    14 |   55               5 or more|    25 |    29 |   54
         | 74.55 | 25.45 |                            | 46.30 | 53.70 |

Total        363      89    452               Total        255     196    451

                                              Frequency Missing = 1
```

STATISTICS FOR TABLE OF SON BY MAM_EVER   STATISTICS FOR TABLE OF SON BY MAM_2YRS

Statistic	DF	Value	Prob		Statistic	DF	Value	Prob
Chi-Square	3	2.821	0.420		Chi-Square	3	2.803	0.423
Likelihood Ratio Chi-Square	3	2.822	0.420		Likelihood Ratio Chi-Square	3	2.781	0.427
Mantel-Haenszel Chi-Square	1	0.062	0.804		Mantel-Haenszel Chi-Square	1	1.161	0.281
Phi Coefficient		0.079			Phi Coefficient		0.079	
Contingency Coefficient		0.079			Contingency Coefficient		0.079	
Cramer's V		0.079			Cramer's V		0.079	

Sample Size = 452

Effective Sample Size = 451
Frequency Missing = 1

The Mantel-Haenszel chi-square statistics shows that there is no association between ever had a mammogram or had mammogram to the no. of living sons one has. (p=0.804 & p=0.281) .

3.Question asked: How many sons have you seen in the last month?

```
SON        MAM_EVER                         SON        MAM_2YRS

Frequency|                                  Frequency|
Row Pct  |      1 |      2 |  Total         Row Pct  |      1 |      2 |  Total

None     |     17 |      8 |    25          None     |     11 |     14 |    25
         |  68.00 |  32.00 |                         |  44.00 |  56.00 |

1or 2    |    189 |     47 |   236          1 or 2   |    139 |     96 |   235
         |  80.08 |  19.92 |                         |  59.15 |  40.85 |

3 or 4   |     88 |     18 |   106          3 or 4   |     59 |     47 |   106
         |  83.02 |  16.98 |                         |  55.66 |  44.34 |

5 or more|     25 |      6 |    31          5 or more|     14 |     17 |    31
         |  80.65 |  19.35 |                         |  45.16 |  54.84 |

Total          319       79     398        Total          223      174     397

Frequency Missing = 54                     Frequency Missing = 55

STATISTICS FOR TABLE OF SON BY MAM_EVER    STATISTICS FOR TABLE OF SON BY MAM_2YRS

Statistic          DF   Value   Prob       Statistic          DF   Value   Prob
_____    _____

Chi-Square          3   2.874  0.412       Chi-Square          3   3.888  0.274
Likelihood Ratio Chi-Square  3  2.627 0.453 Likelihood Ratio Chi-Square  3  3.862 0.277
Mantel-Haenszel Chi-Square   1  0.846 0.358 Mantel-Haenszel Chi-Square   1  0.790 0.374
Phi Coefficient          0.085             Phi Coefficient          0.099
Contingency Coefficient  0.085             Contingency Coefficient  0.098
Cramer's V               0.085             Cramer's V               0.099

Effective Sample Size = 398                Effective Sample Size = 397
Frequency Missing = 54                     Frequency Missing = 55
WARNING: 12% of the data are missing.      WARNING: 12% of the data are missing.
```

The Mantel-Haenszel chi-square statistics show that there is no association between ever had a mammogram or had mammogram to no. of sons one has seen in the last month. (p=0.358 & p=0.374) .
(missing value includes the number of women who do not have any sons.)

4. Question asked: How many sons have you talked to by phone in the last month?

```
SON         MAM_EVER                        SON         MAM_2YRS
Frequency|                                  Frequency|
Row Pct  |     1 |     2 | Total            Row Pct  |     1 |     2 | Total
---------+-------+-------+                  ---------+-------+-------+
None     |    13 |     9 |    22            None     |     8 |    13 |    21
         | 59.09 | 40.91 |                           | 38.10 | 61.90 |
---------+-------+-------+                  ---------+-------+-------+
1 or 2   |   193 |    48 |   241            1 or 2   |   141 |   100 |   241
         | 80.08 | 19.92 |                           | 58.51 | 41.49 |
---------+-------+-------+                  ---------+-------+-------+
3 or 4   |    86 |    16 |   102            3 or 4   |    60 |    42 |   102
         | 84.31 | 15.69 |                           | 58.82 | 41.18 |
---------+-------+-------+                  ---------+-------+-------+
5 or more|    27 |     6 |    33            5 or more|    14 |    19 |    33
         | 81.82 | 18.18 |                           | 42.42 | 57.58 |
---------+-------+-------+                  ---------+-------+-------+
Total        319      79     398           Total        223     174     397

Frequency Missing = 54                      Frequency Missing = 55

STATISTICS FOR TABLE OF SON BY MAM_EVER      STATISTICS FOR TABLE OF SON BY MAM_2YRS

Statistic                 DF  Value   Prob   Statistic                 DF  Value   Prob
------------------------------------------   ------------------------------------------
Chi-Square                 3  7.303  0.063   Chi-Square                 3  6.145  0.105
Likelihood Ratio Chi-Square 3 6.328  0.097   Likelihood Ratio Chi-Square 3 6.101  0.107
Mantel-Haenszel Chi-Square  1 2.074  0.150   Mantel-Haenszel Chi-Square  1 0.458  0.499
Phi Coefficient               0.135          Phi Coefficient               0.124
Contingency Coefficient       0.134          Contingency Coefficient       0.123
Cramer's V                    0.135          Cramer's V                    0.124

Effective Sample Size = 398                  Effective Sample Size = 397
Frequency Missing = 54                       Frequency Missing = 55
WARNING: 12% of the data are missing.        WARNING: 12% of the data are missing.
```

The Mantel-Haenszel chi-square statistics show that there is no association between ever had a mammogram or had mammogram to number of sons one has talked to in the last month.
(p=0.150 & p=0.499) .
(missing value includes the number of women who do not have any sons.)

5. How many living daughters you have?

```
DAUGHTER     MAM_EVER

Frequency|
Row Pct  |       1 |       2 |  Total
---------+---------+---------+
       0 |      44 |       6 |     50
         |   88.00 |   12.00 |
---------+---------+---------+
       1 |      88 |      19 |    107
         |   82.24 |   17.76 |
---------+---------+---------+
       2 |     102 |      22 |    124
         |   82.26 |   17.74 |
---------+---------+---------+
       3 |     127 |      40 |    167
         |   76.05 |   23.95 |
---------+---------+---------+
Total          361        87       448

Frequency Missing = 4
```

STATISTICS FOR TABLE OF DAUGHT BY MAM_EVER

Statistic	DF	Value	Prob
Chi-Square	3	4.363	0.225
Likelihood Ratio Chi-Square	3	4.473	0.215
Mantel-Haenszel Chi-Square	1	3.811	0.051
Phi Coefficient		0.099	
Contingency Coefficient		0.098	
Cramer's V		0.099	

Effective Sample Size = 448
Frequency Missing = 4

```
DAUGHTER     MAM_2YRS

Frequency|
Row Pct  |       1 |       2 |  Total
---------+---------+---------+
       0 |      32 |      18 |     50
         |   64.00 |   36.00 |
---------+---------+---------+
       1 |      64 |      43 |    107
         |   59.81 |   40.19 |
---------+---------+---------+
       2 |      66 |      57 |    123
         |   53.66 |   46.34 |
---------+---------+---------+
       3 |      92 |      75 |    167
         |   55.09 |   44.91 |
---------+---------+---------+
Total          254       193       447

Frequency Missing = 5
```

STATISTICS FOR TABLE OF DAUGHT BY MAM_2YRS

Statistic	DF	Value	Prob
Chi-Square	3	2.146	0.543
Likelihood Ratio Chi-Square	3	2.164	0.539
Mantel-Haenszel Chi-Square	1	1.522	0.217
Phi Coefficient		0.069	
Contingency Coefficient		0.069	
Cramer's V		0.069	

Effective Sample Size = 447
Frequency Missing = 5

The Mantel-Haenszel chi-square statistics shows that there is an association between ever had a mammogram to the number of living daughters one has. (p=0.051). Mammographic use decreases with number of daughters.

6. Question asked: How many daughters have you seen in the last month?

```
DAUGHT       MAM_EVER                          DAUGHT       MAM_2YRS

Frequency|                                     Frequency|
Row Pct  |      1 |      2 | Total             Row Pct  |      1 |      2 | Total

       0 |     21 |      7 |    28                    0 |     15 |     13 |    28
         |  75.00 |  25.00 |                          |  53.57 |  46.43 |

       1 |     96 |     22 |   118                    1 |     69 |     49 |   118
         |  81.36 |  18.64 |                          |  58.47 |  41.53 |

       2 |    105 |     21 |   126                    2 |     73 |     52 |   125
         |  83.33 |  16.67 |                          |  58.40 |  41.60 |

3 or more|     94 |     31 |   125             3 or more|     64 |     61 |   125
         |  75.20 |  24.80 |                          |  51.20 |  48.80 |

Total         316       81     397            Total         221      175     396

Frequency Missing = 55                        Frequency Missing = 56

STATISTICS FOR TABLE OF DAUGHT BY MAM_EVER     STATISTICS FOR TABLE OF DAUGHT BY MAM_2YRS

Statistic                DF   Value   Prob    Statistic                DF   Value   Prob


Chi-Square                3   3.160   0.368   Chi-Square                3   1.814   0.612
Likelihood Ratio Chi-Square 3 3.131   0.372   Likelihood Ratio Chi-Square 3 1.811   0.613
Mantel-Haenszel Chi-Square 1  0.440   0.507   Mantel-Haenszel Chi-Square 1  0.679   0.410
Phi Coefficient               0.089           Phi Coefficient               0.068
Contingency Coefficient       0.089           Contingency Coefficient       0.068
Cramer's V                    0.089           Cramer's V                    0.068

Effective Sample Size = 397                   Effective Sample Size = 396
Frequency Missing = 55                        Frequency Missing = 56
WARNING: 12% of the data are missing.         WARNING: 12% of the data are missing.
```

The Mantel-Haenszel chi-square statistics shows that there is no association between ever had a mammogram or had mammogram to the number of daughters one has seen in the last month. (p=0.507& p=0.410)
(missing value includes the number of women who do not have any daughters.)

7. How many daughters have you talked on phone in the past month?

```
DAUGHT       MAM_EVER                          DAUGHT       MAM_2YRS

Frequency|                                     Frequency|
Row Pct  |      1 |      2 | Total             Row Pct  |      1 |      2 | Total
---------+--------+--------+                   ---------+--------+--------+
       0 |      9 |      8 |   17                     0 |      5 |     11 |   16
         |  52.94 |  47.06 |                          |  31.25 |  68.75 |
---------+--------+--------+                   ---------+--------+--------+
       1 |     91 |     19 |  110                     1 |     66 |     44 |  110
         |  82.73 |  17.27 |                          |  60.00 |  40.00 |
---------+--------+--------+                   ---------+--------+--------+
       2 |    109 |     24 |  133                     2 |     74 |     59 |  133
         |  81.95 |  18.05 |                          |  55.64 |  44.36 |
---------+--------+--------+                   ---------+--------+--------+
3 or more|    106 |     30 |  136             3 or more|     75 |     61 |  136
         |  77.94 |  22.06 |                          |  55.15 |  44.85 |
---------+--------+--------+                   ---------+--------+--------+
Total         315       81     396             Total         220      175     395

Frequency Missing = 56                         Frequency Missing = 57
```

STATISTICS FOR TABLE OF DAUGHT BY MAM_EVER

Statistic	DF	Value	Prob
Chi-Square	3	8.769	0.033
Likelihood Ratio Chi-Square	3	7.416	0.060
Mantel-Haenszel Chi-Square	1	0.221	0.638
Phi Coefficient		0.149	
Contingency Coefficient		0.147	
Cramer's V		0.149	

Effective Sample Size = 396
Frequency Missing = 56
WARNING: 12% of the data are missing.

STATISTICS FOR TABLE OF DAUGHT BY MAM_2YRS

Statistic	DF	Value	Prob
Chi-Square	3	4.718	0.194
Likelihood Ratio Chi-Square	3	4.737	0.192
Mantel-Haenszel Chi-Square	1	0.072	0.789
Phi Coefficient		0.109	
Contingency Coefficient		0.109	
Cramer's V		0.109	

Effective Sample Size = 395
Frequency Missing = 57
WARNING: 13% of the data are missing.

The Mantel-Haenszel chi-square statistics show that there is no association between ever had a mammogram to the number of daughters one has talked in the last month. (p=0.638)
There is no association between had mammogram in the past 2yrs and the number of daughters one has talked in the past month. (p=0.789) .
(missing value includes the number of women who do not have any daughters.)

However, it appears that women who didn't talk to their daughters in the last month were less likely to have ever had a mammogram or had one in past 2 years.

b. Increases with **Marital Satisfaction**

```
MARITAL      MAM_EVER                         MARITAL      MAM_2YRS
SCORE                                         SCORE

Frequency|                                    Frequency|
Row Pct  |       1|       2|  Total           Row Pct  |       1|       2|  Total
         +--------+--------+                           +--------+--------+
       1 |      38|      14|     52                  1 |      26|      26|     52
         |   73.08|   26.92|                           |   50.00|   50.00|
         +--------+--------+                           +--------+--------+
       2 |      42|      13|     55                  2 |      27|      28|     55
         |   76.36|   23.64|                           |   49.09|   50.91|
         +--------+--------+                           +--------+--------+
       3 |      58|       6|     64                  3 |      43|      20|     63
         |   90.63|    9.38|                           |   68.25|   31.75|
         +--------+--------+                           +--------+--------+
       4 |      52|      13|     65                  4 |      37|      28|     65
         |   80.00|   20.00|                           |   56.92|   43.08|
         +--------+--------+                           +--------+--------+
       5 |      46|       6|     52                  5 |      34|      18|     52
         |   88.46|   11.54|                           |   65.38|   34.62|
         +--------+--------+                           +--------+--------+
Total          236       52     288           Total          167      120     287

Frequency Missing = 164                       Frequency Missing = 165
```

STATISTICS FOR TABLE OF MARITAL SCORE BY MAM_EVER | STATISTICS FOR TABLE OF MARITAL SCORE BY MAM_2YRS

Statistic	DF	Value	Prob		Statistic	DF	Value	Prob
Chi-Square	4	8.840	0.065		Chi-Square	4	7.077	0.132
Likelihood Ratio Chi-Square	4	9.204	0.056		Likelihood Ratio Chi-Square	4	7.135	0.129
Mantel-Haenszel Chi-Square	1	3.986	0.046		Mantel-Haenszel Chi-Square	1	3.114	0.078
Phi Coefficient		0.175			Phi Coefficient		0.157	
Contingency Coefficient		0.173			Contingency Coefficient		0.155	
Cramer's V		0.175			Cramer's V		0.157	

```
Effective Sample Size = 288                   Effective Sample Size = 287
Frequency Missing = 164                       Frequency Missing = 165
WARNING: 36% of the data are missing.         WARNING: 37% of the data are missing.
```

The Mantel-Haenszel chi square statistics indicate the marital satisfaction is significantly associated with ever had a mammogram and having had a mammogram in the past two years. (p=0.046 & p=0.078).

c. Increases with **affectual solidarity.**

Question asked: Generally, how well do you and younger female relative get along together?

```
L5(L5)      MAM_EVER                      L5(L5)      MAM_2YRS

Frequency|                              Frequency|
Row Pct  |    1  |    2 | Total         Row Pct  |    1  |    2 | Total
         |       |      |                        |       |      |
Extremely|   92  |   21 |  113          Extremely|   73  |   40 |  113
well     | 81.42 |18.58 |               well     | 64.60 |35.40 |
         |       |      |                        |       |      |
very well|   84  |   17 |  101          Very well|   56  |   45 |  101
         | 83.17 |16.83 |                        | 55.45 |44.55 |
         |       |      |                        |       |      |
pretty   |   26  |    9 |   35          pretty   |   20  |   15 |   35
well     | 74.29 |25.71 |               well     | 57.14 |42.86 |
         |       |      |                        |       |      |
Somewhat |   10  |    2 |   12          Somewhat |    7  |    4 |   11
well     | 83.33 |16.67 |               well     | 63.64 |36.36 |
         |       |      |                        |       |      |
not well |    1  |    0 |    1          not well |    0  |    1 |    1
         |100.00 | 0.00 |                        |  0.00 |100.00|
         |       |      |                        |       |      |
Total        213     49    262          Total       156    105    261

Frequency Missing = 190                 Frequency Missing = 191

STATISTICS FOR TABLE OF L5 BY MAM_EVER  STATISTICS FOR TABLE OF L5 BY MAM_2YRS

Statistic              DF   Value  Prob  Statistic              DF   Value  Prob
--------------------------------------   --------------------------------------

Chi-Square              4   1.628         Chi-Square             4   3.537
0.804                                     0.472
Likelihood Ratio Chi-Square  4  1.728     Likelihood Ratio Chi-Square  4  3.881
0.786                                     0.422
Mantel-Haenszel Chi-Square   1  0.059     Mantel-Haenszel Chi-Square   1  1.315
0.808                                     0.252
Phi Coefficient             0.079         Phi Coefficient             0.116
Contingency Coefficient     0.079         Contingency Coefficient     0.116
Cramer's V                  0.079         Cramer's V                  0.116

Effective Sample Size = 262               Effective Sample Size = 261
Frequency Missing = 190                   Frequency Missing = 191
WARNING: 42% of the data are missing.     WARNING: 42% of the data are missing.
WARNING: 30% of the cells have expected   WARNING: 30% of the cells have expected
counts less than 5. Chi-Square may not    counts less than 5. Chi-Square may not
be a valid test.                          be a valid test.
```

Since the chi square test may not be valid, Fisher's Exact test was performed. The results were not significant (p=.746 for ever had a mammogram and p=.475 for having a mammogram in the past 2 years).

d. How likely would you be to go for a mammogram if the younger female relative suggested you get one?

```
L14A(L14A)     MAM_EVER                    L14A(L14A)     MAM_2YRS

Frequency|                                 Frequency|
Row Pct  |      1|      2| Total           Row Pct  |      1|      2| Total

  very   |   142 |    17 |  159              very   |    99 |    59 |  158
  likely | 89.31 | 10.69 |                   likely | 62.66 | 37.34 |

somewhat |    63 |    20 |   83            somewhat |    48 |    35 |   83
  likely | 75.90 | 24.10 |                   likely | 57.83 | 42.17 |

not very |    25 |     9 |   34            not very |    21 |    13 |   34
  likely | 73.53 | 26.47 |                   likely | 61.76 | 38.24 |

notat all|    16 |    12 |   28            notat all|    10 |    18 |   28
  likely | 57.14 | 42.86 |                   likely | 35.71 | 64.29 |

Total        246     58     304           Total        178     125     303

Frequency Missing = 148                   Frequency Missing = 149

STATISTICS FOR TABLE OF L14A BY MAM_EVER  STATISTICS FOR TABLE OF L14A BY MAM_2YRS

Statistic              DF   Value  Prob    Statistic              DF   Value  Prob
_____      _____

Chi-Square              3  20.055  0.001   Chi-Square              3   7.283  0.063
Likelihood Ratio Chi-Square 3 18.986 0.001 Likelihood Ratio Chi-Square 3 7.182 0.066
Mantel-Haenszel Chi-Square  1 18.978 0.001 Mantel-Haenszel Chi-Square  1 4.642 0.031
Phi Coefficient            0.257           Phi Coefficient            0.155
Contingency Coefficient    0.249           Contingency Coefficient    0.153
Cramer's V                 0.257           Cramer's V                 0.155

Effective Sample Size = 304                 Effective Sample Size = 303
Frequency Missing = 148                     Frequency Missing = 149
WARNING: 33% of the data are missing.       WARNING: 33% of the data are missing.
```

There is an association between ever had a mammogram or had a mammogram in the past 2yrs to the advice of the younger female relative. (p=0.001 & p=0.031).Moreover, among those who never had a mammogram 64% would be likely to get one on advice of the younger female relative. Among those who have not had one in the past 2 years, 75% would be likely to get one.

j. Question asked: How likely would you be to go for a mammogram if your husband suggested you to get one?

```
E17C(E17c)     MAM_EVER                    E17C(E17c)     MAM_2YRS

Frequency|                                 Frequency|
Row Pct  |     1 |     2 | Total           Row Pct  |     1 |     2 | Total
---------+-------+-------+-----            ---------+-------+-------+-----
Very     |   123 |    12 |   135           Very     |    89 |    45 |   134
  likely | 91.11 |  8.89 |                   likely | 66.42 | 33.58 |
---------+-------+-------+-----            ---------+-------+-------+-----
Somewhat |    58 |    16 |    74           Somewhat |    40 |    34 |    74
  likely | 78.38 | 21.62 |                   likely | 54.05 | 45.95 |
---------+-------+-------+-----            ---------+-------+-------+-----
Not very |    24 |     3 |    27           Not very |    20 |     7 |    27
  likely | 88.89 | 11.11 |                   likely | 74.07 | 25.93 |
---------+-------+-------+-----            ---------+-------+-------+-----
Not at all|   27 |     9 |    36           Not at all|   15 |    21 |    36
  likely | 75.00 | 25.00 |                   Likely | 41.67 | 58.33 |
---------+-------+-------+-----            ---------+-------+-------+-----
Total        232      40     272          Total        164     107     271

Frequency Missing = 180                   Frequency Missing = 181
```

STATISTICS FOR TABLE OF E17C BY MAM_EVER   STATISTICS FOR TABLE OF E17C BY MAM_2YRS

Statistic	DF	Value	Prob	Statistic	DF	Value	Prob
Chi-Square	3	9.783	0.021	Chi-Square	3	10.677	0.014
Likelihood Ratio Chi-Square	3	9.578	0.023	Likelihood Ratio Chi-Square	3	10.659	0.014
Mantel-Haenszel Chi-Square	1	5.388	0.020	Mantel-Haenszel Chi-Square	1	4.406	0.036
Phi Coefficient		0.190		Phi Coefficient		0.198	
Contingency Coefficient		0.186		Contingency Coefficient		0.195	
Cramer's V		0.190		Cramer's V		0.198	

```
Effective Sample Size = 272               Effective Sample Size = 271
Frequency Missing = 180                   Frequency Missing = 181
WARNING: 40% of the data are missing.     WARNING: 40% of the data are missing.
```

The Mantel-Haenszel chi-square statistics show there is an association with ever had a mammogram or had mammogram in the past 2yrs and likelihood of having mammogram if husband suggested to get one. (p=0.020 and p= 0.036).

k. Question asked: How likely would you be to go for a mammogram if any other relative or family member suggested you to get one?

```
E17D(E17d)     MAM_EVER                    E17D(E17d)     MAM_2YRS

Frequency|                                 Frequency|
Row Pct  |      1|      2| Total           Row Pct  |      1|      2| Total

  Very   |    125|      9|  134              Very   |     93|     40|  133
  likely |  93.28|   6.72|                   Likely |  69.92|  30.08|

somewhat |    115|     28|  143            somewhat |     80|     63|  143
  likely |  80.42|  19.58|                   likely |  55.94|  44.06|

Not very |     60|     13|   73            Not very |     42|     31|   73
  likely |  82.19|  17.81|                   Likely |  57.53|  42.47|

Not at all|    60|     16|   76            Not at all|    38|     38|   76
  likely |  78.95|  21.05|                   Likely |  50.00|  50.00|

Total         360     66    426           Total         253    172    425

Frequency Missing = 26                    Frequency Missing = 27


STATISTICS FOR TABLE OF E17D BY MAM_EVER  STATISTICS FOR TABLE OF E17D BY MAM_2YRS

Statistic              DF  Value   Prob    Statistic              DF  Value   Prob


Chi-Square              3  11.802  0.008   Chi-Square              3   9.714  0.021
Likelihood Ratio Chi-Square 3 13.300 0.004 Likelihood Ratio Chi-Square 3 9.875 0.020
Mantel-Haenszel Chi-Square 1 7.436  0.006  Mantel-Haenszel Chi-Square 1 7.487  0.006
Phi Coefficient            0.166           Phi Coefficient            0.151
Contingency Coefficient    0.164           Contingency Coefficient    0.149
Cramer's V                 0.166           Cramer's V                 0.151

Effective Sample Size = 426               Effective Sample Size = 425
Frequency Missing = 26                    Frequency Missing = 27
```

The Mantel-Haenszel chi-square statistics show there is an association with ever had a mammogram or had mammogram in the past 2yrs and likelihood of having mammogram if any family member suggested to get one. (p=0.006 and p= 0.006).

i. Encouragement from any family member or relative is associated with mammographic use:
Question asked: Have any of your family members ever encouraged you to have a mammogram?

```
E15(E15)      MAM_EVER                        E15(E15)      MAM_2YRS

Frequency|                                    Frequency|
Row Pct  |       1|       2| Total            Row Pct  |       1|       2| Total

  Yes    |    106 |     23 |  129                1     |     69 |     59 |  128
         |  82.17 |  17.83 |                           |  53.91 |  46.09 |

  No     |    257 |     66 |  323                2     |    186 |    137 |  323
         |  79.57 |  20.43 |                           |  57.59 |  42.41 |

Total        363       89     452            Total        255      196     451

                                             Frequency Missing = 1

STATISTICS FOR TABLE OF E15 BY MAM_EVER      STATISTICS FOR TABLE OF E15 BY MAM_2YRS

Statistic                DF  Value   Prob    Statistic                DF  Value   Prob


Chi-Square                1  0.395  0.530    Chi-Square                1  0.505  0.477
Likelihood Ratio Chi-Square 1 0.401 0.526    Likelihood Ratio Chi-Square 1 0.504 0.478
Continuity Adj. Chi-Square 1 0.248  0.619    Continuity Adj. Chi-Square 1 0.366  0.545
Mantel-Haenszel Chi-Square 1 0.394  0.530    Mantel-Haenszel Chi-Square 1 0.504  0.478
Phi Coefficient              0.030            Phi Coefficient             -0.033
Contingency Coefficient      0.030            Contingency Coefficient      0.033
Cramer's V                   0.030            Cramer's V                  -0.033

Sample Size = 452                            Effective Sample Size = 451
                                             Frequency Missing = 1
```

The Mantel-Haenszel chi-square statistics show there is no association with ever had a mammogram or had mammogram in the past 2yrs and encouragement from any family member or relative. (p=0.530 and p= 0.478).